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Freitas De Moura, Andre Aroldo; Gupta, Jairaj

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André Aroldo Freitas De Moura, Jairaj Gupta

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Mandatory adoption of IFRS in Latin America: a boon or a bias

André Aroldo Freitas De Moura

Department of Accounting and Finance, FUCAPE Business School
Vitória-ES, 29075-505, Brazil
Email: andrearoldomoura@gmail.com

Jairaj Gupta

Department of Finance, University of Birmingham
Birmingham, B15 2TY, United Kingdom
Email: J.Gupta@outlook.com

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Abstract

Exploiting the unique feature that Latin American countries have not undergone a significant change to the enforcement of accounting standards and investor protection mechanisms, we investigate whether mandatory adoption of IFRS and firm-level reporting incentives improve analysts' information environment in Latin American countries (Argentina, Brazil, Chile, Mexico and Peru), and whether the precision of public, private and consensus information improve after IFRS adoption. Test results show that mandatory adoption of IFRS and firm-level reporting incentives improve analysts' information environment. Overall, we confirm the positive effects of IFRS adoption, because the precision of public and consensus information is enhanced.

Keywords: IFRS, analysts' information environment, forecast accuracy, target price forecast dispersion, investor protection mechanisms

JEL: G14, G18, M40.

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1. Introduction

Ball (2006) and Byard *et al.* (2011) argue that mandatory adoption of IFRS has the potential to improve the transparency of financial reports, facilitate cross-border investment, reduce information asymmetry, and contribute to the efficiency of the markets. These benefits rely on the presumption that, under IFRS, firms are required to provide high-quality information to investors, which implies greater comparability than domestic accounting standards (Horton *et al.*, 2013). High-quality information may also benefit analysts (Ashbaugh and Pincus, 2001), as their forecast accuracy may increase and the dispersion of their forecasts may reduce in the post-adoption period. Consistent with this view, past studies report an improvement in analysts' information environment following the mandatory adoption of IFRS in countries where there is strong enforcement of accounting standards (e.g. Byard *et al.*, 2011; Horton *et al.*, 2013; Houqe *et al.*, 2014). However, the mandatory adoption of IFRS may not be the only factor responsible for improving analysts' information environment, as managers' incentives, the enforcement of accounting standards, and a country's investor protection mechanisms can also affect the information environment (see among others Byard *et al.*, 2011; Houqe *et al.*, 2014; Preiato *et al.*, 2015). Byard *et al.* (2011) report that IFRS only improves analysts' information environment in countries where the enforcement is strong. They also report that analysts' forecast accuracy improves more for firms that have incentives to adopt IFRS under the institutional settings of weak enforcement and greater disparity between domestic GAAP and IFRS. Houqe *et al.* (2014) also find an improvement in analysts' forecast accuracy in European countries with low investor protection mechanisms, but their sample is composed of countries that have strong enforcement of accounting standards (Brown *et al.*, 2014). Byard *et al.* (2011) rely on Kaufmann *et al.* (2007)'s proxy for the quality of countries' legal and enforcement

regimes. This is not the latest proxy for the sampling period after 2010. Moreover, Preiato *et al.* (2015) argue that the enforcement may change over time, as countries are likely to strengthen the enforcement of the accounting standards over the years. This casts doubt over previous literature, and we therefore argue that it is necessary to review the enforcement in each country regularly and adjust the related indexes accordingly. This method is also helpful to avoid the bundle effect of enforcement and the effect of IFRS adoption (Christensen *et al.*, 2013).

In contrast to earlier literatures that investigate the impact of IFRS adoption on analysts' information environment in developed nations, we focus on Latin American countries, because their unique institutional setting could provide new insight to the IFRS literature. Previous literature has documented that the strength of the enforcement of accounting standards and investor protection mechanisms may change according to the progress of the implementation of IFRS (Brown *et al.*, 2014), which makes it difficult to isolate the IFRS adoption effect from other institutional effects. Therefore, to pinpoint the IFRS adoption effect we evaluate in this paper the strength of the institutional settings as well as if they have not changed significantly between the pre- and post-IFRS adoption periods. We reach this objective by issuing a questionnaire about several aspects regarding enforcement of accounting standards and investor protection mechanisms to each country's securities market regulator, which is available at appendix 1 and discussed in the research design of this paper. The results of the questionnaire show that these institutional settings in Latin American countries are weak and there has been no change around the IFRS adoption dates. Therefore, investigating the effect of IFRS adoption on these countries helps to mitigate the bundle-effect issue (Christensen *et al.*, 2013), and addresses the concern of whether the benefits documented by previous research are due to stricter enforcement, or due to the

IFRS adoption (Preiato *et al.*, 2015). Additionally, unlike other countries, firms in Latin America are required to adopt IFRS in separate financial statements as well as in consolidated financial statements.¹ Thus, the different reporting regime and the unique institutional settings of Latin American countries allows us to pinpoint the effects of IFRS and firm-level reporting incentives more accurately in comparison with previous studies (e.g. Byard *et al.*, 2011; Tan *et al.*, 2011; Houqe *et al.*, 2014; Priato *et al.*, 2015).

We conjecture that the adoption of IFRS could improve analysts' information environment in the long-term, even in Latin American countries where the institutional settings are weak. There are two reasons that support our assumption. Firstly, previous domestic accounting standards were designed to attend tax and government needs, which were not adequately prepared to inform investors, analysts, and other market participants². This environment may also affect the performance of analysts, as earnings forecasts tend to have a higher bias in countries with low investor protection mechanisms (Hovakimian and Saenyasiri, 2014). Aiming to change this poor environment, the regulators of these countries expect mandatory adoption of IFRS to improve firms' accounting quality, and thereby enhance the transparency and reliability of financial statements, which would subsequently improve its usefulness for external users such as analysts and investors. As IFRS is market-oriented in comparison with previous standards, the financial statements derived under these standards should benefit more investors and analysts due to the improved accounting quality of Latin American firms (García *et al.*, 2017), which would eventually better allow analysts to

¹ The exception is in Argentina where firms have the choice to adopt IAS 27 from August 2014 or to disclose equity holdings in subsidiaries and affiliates according to Technical Resolution 26 of FACPCE (Argentine Federation of professionals of economics). In Mexico, however, firms are not required to adopt IFRS in separate financial statements. The information can be retrieved from <http://www.ifrs.org/Use-around-the-world/Documents/Jurisdiction-profiles>.

² For details of the differences between domestic accounting standards and IFRS, see Bae *et al.* (2008).

shape their forecasts. Secondly, these countries have faced a recession since the financial crisis during mid-2007, with increasing debt and stagnant GDP growth in the years around the IFRS adoption (IMF 2015). Firms in these countries need to rely more than ever before on both domestic and foreign investors to provide sources of funding. Thus, the adoption of IFRS is an opportunity for firms to disclose high-quality accounting in order to attract investors and expand their coverage by international analysts, which would facilitate the capital market development (De la Torre and Schmukler, 2006). This argument finds its support from the signalling theory, as firms can signal the quality of their equity to investors by disclosing extra information and adopting additional mechanisms when the cost to relay and verify the information is high (Barth *et al.*, 2008), which is the case in countries with weak institutional settings³. Furthermore, according to the bonding theory, countries with weak investor protection mechanisms may have incentives to adopt IFRS in order to improve the comparability of financial information (Hope *et al.*, 2006). This is because they want to “bond” the higher quality of financial statements to their weak institutional setting, in order to attract investments and increase investors’ confidence (Hope *et al.*, 2006). This argument is also consistent with an increase in foreign direct investment in these countries in recent years from the U.S., China and Germany (IMF 2015). Additionally, gradually more Latin American firms will cross-list in foreign exchange markets, and likely improve their investment and cash decisions (Ghosh and He, 2015). As such, we expect that analysts will take advantage of the increased accounting quality, which will lead to more accurate and less dispersed forecasts.

³ Investors perceive a greater risk in investing in companies where the investor protection mechanisms are weak, and as such, companies with strong reporting incentives can disclose more information to mitigate information asymmetry problems and attract investments.

We study five countries: Argentina, Brazil, Chile, Mexico, and Peru,⁴ across the sampling period from 2003 to 2015⁵. To achieve our research objectives, we firstly examine whether the mandatory adoption of IFRS in these countries has improved analysts' information environment, measured in terms of analysts' forecast accuracy of earnings, the forecast dispersion of earnings, the forecast dispersion of target price, and whether there are more analysts following Latin American firms in the post-adoption period. Analysing these countries better allows us to investigate more accurately the effect of IFRS and firms' incentives, in contrast with several earlier studies (e.g. Byard *et al.*, 2011; Horton *et al.*, 2013; Preiato *et al.*, 2015), and mitigate the "bundle effect" issue (Christensen *et al.*, 2013). Thus, we next evaluate whether firm-level reporting incentives alone, or the effect of both IFRS and firm-level reporting incentives, can affect the information environment. Third, in order to evaluate whether any improvement in analysts' information environment is really derived from the adoption of IFRS, we measure whether the precision of public and private information increased after the adoption of IFRS, following the approach suggested by Barron *et al.* (1998). To achieve our objectives of investigating the long-term effect of IFRS, in contrast with previous literature we compare the measures of analysts' information environment in the four years before and the four years after the official date of mandatory adoption of IFRS.

This study makes several contributions to the existing literature. First, to the best of our knowledge, this is the first study examining the impact of IFRS on analysts' information environment in Latin American countries. It addresses the demand of the International Accounting Standards Board (IASB) for research investigating the impact

⁴ The mandatory adoption date for publicly listed firms to adopt IFRS was on: 1st January 2012, 31st December 2010, 31st December 2009, 1st January 2012, and 1st January 2012 respectively for Argentina, Brazil, Chile, Mexico and Peru. We check manually firm by firm for the accurate adoption date, as some of the firms were given a grace period to adopt IFRS.

⁵ The other Latin American countries are not included due to data availability.

of IFRS in developing economies. Second, unlike previous literature, this study measures the long-term effect of the mandatory IFRS adoption. Third, it shows that improvements to the analysts' information environment arise due to IFRS, which is denoted in the increased precision of public and consensus information. Fourth, our research design allows us to better investigate the sole effect of IFRS adoption on analysts' information environment and firm-level reporting incentives, as the adoption of IFRS in these countries is not bundled with changes in enforcement and investor protection mechanisms. Fifth, our metrics of analysts' information environment are also based on target price forecasts, in contrast with previous research that focuses solely on earnings forecasts (e.g. Byard *et al.*, 2011; Horton *et al.*, 2013; Preiato *et al.*, 2015). We believe our results shall be of interest and use to the IASB, regulators, and investment community.

The remainder of this paper is organised as follows. Section 2 presents review of relevant literature and hypotheses development. Section 3 presents the research design. Section 4 describes the data and sampling procedures. Section 5 discusses the results. Lastly, Section 6 concludes this study.

2. Literature Review and Hypotheses Development

The prime objective of this study is to examine whether mandatory adoption of IFRS can improve the quality of analysts' information environment in Latin American countries whose institutional settings of enforcement and investor protection are weak. We conjecture that there is a positive effect of mandatory adoption of IFRS on the quality of analysts' information environment measured in terms of analysts' forecast accuracy, number of analysts following firms, dispersion of earnings forecasts, and dispersion of target price forecasts. This is because, first, regulators in Latin America

expect that IFRS adoption will increase the transparency and accounting quality of financial statements, in contrast with those prepared according to domestic accounting standards (see Fortin *et al.* (2010) for a discussion around this)⁶. Thus, as regulators expect accounting quality to improve in the post-adoption period, the accuracy of earnings forecasts should improve as well (see Li *et al.*, 2017). Second, previous literature suggests that countries with a big gap between local standards and IFRS, which is the case of Latin American countries, should present a bigger improvement in accounting quality, which in turn would improve analysts' forecast accuracy (Bae *et al.*, 2008; Byard *et al.*, 2011). As Latin American firms are required to provide accounting information in higher quantity and quality under IFRS in comparison to previous domestic standards, the financial statements will be more transparent, consistent, and comparable, and analysts' earnings forecasts are likely to become more precise. Thus, the first hypothesis is:

H1a: The accuracy of earnings forecasts increased following mandatory adoption of IFRS in Latin America.

As argued above, mandatory adoption of IFRS can increase the comparability and consistency of accounting information (e.g. Jones and Finley, 2011; Cascino and Gassen, 2015). Thus, analysts can compare firms' financial statements worldwide as they are based on the same accounting standards, which shall help to improve their forecast accuracy and reduce the dispersion of their forecasts (Tan *et al.*, 2011; Houque *et*

⁶ More information on the expectations of each countries' securities market regulator can be found at the following websites: Argentina (Comisión Nacional de Valores (CNV)), which is available at <http://www.cnv.gob.ar/leyesyreg/cnv/esp/rgc562-09.htm>; Brazil (Comissão de Valores Mobiliários (CVM)), which is available at www.cvm.gov.br/export/sites/cvm/legislacao/deli/anexos/0500/deli565.doc; Chile (Superintendencia Valores y Seguros (SVS)), which is available at http://www.svs.cl/sitio/legislacion_normativa/normativa/doc/ofc_368_2006.pdf; Mexico (Comisión Nacional Bancaria y de Valores (CNBV)), which is available at <http://www.iasplus.com/en/binary/americas/0811cnbvenglish.pdf>; Peru (Comisión Nacional Supervisora de Empresas y Valores (CONASEV)), which is available at <http://www.iasplus.com/en/binary/americas/1012peruconasev.pdf>

al., 2014). As such, the disagreement among them is likely to reduce. We therefore set the following hypothesis:

H1b: The dispersion of earnings forecasts reduced following mandatory adoption of IFRS in Latin America.

According to Lang and Lundholm (1996), more analysts will follow a firm if its accounting quality improves. Additionally, mandatory IFRS adoption may reduce analysts' time and effort in acquiring and processing firms' information (Byard *et al.*, 2011; Tan *et al.*, 2011; Houqe *et al.*, 2014). This reduces the costs and barriers for foreign analysts to cover more firms across the world, and as such more analysts are likely to follow Latin American firms in the post-adoption period. Thus, the hypothesis is:

H1c: The number of analysts following firms increased following mandatory adoption of IFRS in Latin America.

Unlike previous research that investigates the impact of the IFRS adoption on analysts' information environment by using earnings forecasts only (Byard *et al.*, 2011; Horton *et al.*, 2013; Preiato *et al.*, 2015), we expand the measures of analysts' information environment by also investigating the effect of IFRS on target price forecasts. We conjecture that the disagreement among analysts' target price forecasts will decline in the post-IFRS adoption period. Firstly, this is because mandatory adoption of IFRS might improve the accounting quality, and thus analysts would generally have more high-quality information available from the financial statements. As firms need to disclose more information due to the IFRS requirements, the information asymmetry among firms and investors is expected to decline. This helps analysts to shape their target price forecast. As such, considering that analysts rely on

the financial statements to issue their forecasts (Loh and Mian, 2006), high-quality information and lower information asymmetry would help to reduce the dispersion of the forecasts (Horton *et al.*, 2013). Secondly, earnings forecasts are one of the key inputs for predicting target price (Loh and Mian, 2006), and IFRS leads to higher disclosure and transparency, which enables analysts to issue earnings forecasts that are more accurate and less dispersed, and disagreement in issuing target price should decrease among analysts. Thus, the hypothesis is as follows:

H1d: The dispersion of target price forecast has declined following mandatory adoption of IFRS in Latin America.

Our second objective is to investigate whether firm-level incentives on the implementation of IFRS affect analysts' information environment. Previous studies report that the effects of the adoption of IFRS may be due to firms' incentives, enforcement of accounting standards, and investor protection mechanisms (e.g. Byard *et al.*, 2011; Christensen *et al.*, 2013). As the institutional setting of Latin American countries is weak, there are opportunities for managers using their discretion on the implementation of IFRS. Under these institutional settings, to attract investments, we conjecture that firms with stronger reporting incentives may provide more information than firms with weaker reporting incentives. This assumption is based on the signalling theory, in which firms can signal the quality of their equity to investors by disclosing more information (Barth *et al.*, 2008). This helps to reduce the investors' perception of risk in investing in companies located in countries with weak institutional settings. Therefore, we set the following hypothesis:

H2: Analysts' information environment improved more for firms with stronger incentives to adopt IFRS in Latin America.

As analysts derive and process public and private information to generate their forecasts (Kim *et al.*, 2017), the third objective of this paper is to investigate how mandatory adoption of IFRS affects the precision of public information, private information, or both. This is to evaluate whether any improvement in analysts' information environment is reflected in greater precision arising from public information derived under IFRS. According to Byard *et al.* (2011), IFRS adoption may increase the quality of public information, as firms are required to disclose more information in comparison to domestic standards. As the quantity and quality of accounting information are likely to increase (Ball, 2006; Barth *et al.*, 2008), the public information contained in financial statements could lead to an improvement in the precision of analysts' forecasts (Horton *et al.*, 2013). Thus, we predict that IFRS adoption would lead to an improvement in the precision of public information. We also predict an improvement in the precision of public information in comparison to all available information (consensus) (Barron *et al.*, 1998). Therefore, the hypotheses are as follows:

H3a: The precision of public information is higher following mandatory adoption of IFRS in Latin America.

H3b: The precision of consensus information is higher following mandatory adoption of IFRS in Latin America.

3. Research design

In this section, we first discuss the questionnaire issued to each country's security market regulator to investigate whether the institutional settings have changed around IFRS adoption. Secondly, we also discuss the results of the questionnaire in this

section as it affects the econometric design of our research presented in the following sections. Thirdly, we present the four metrics (earnings forecast accuracy, dispersion of earnings forecasts, number of analysts following firms, and dispersion of target price forecasts) used to evaluate analysts' information environment. Then we discuss the econometric methods used to evaluate whether IFRS has contributed to improve the analysts' information environment, as well as whether firm-level incentives improve the analysts' information environment. Finally, this section reports the methods to calculate the precision of public, private and consensus information, and the analysis employed to evaluate whether IFRS has contributed or not to improve these.

3.1 Questionnaire – Changes in institutional settings

The design of the questionnaire is based on La Porta et al. (1998), Hope (2003), the World Bank (2008)⁷ report on the observance of standards and codes, and Brown et al. (2014); the questionnaire is presented in Appendix 1. Firstly, the questionnaire was prepared in the local language of the target countries, and it was pre-tested (pilot tested) with native speakers in order to ascertain whether the questions were clear. Secondly, the questionnaire was uploaded to Google's forms in order to guarantee the consistency of its format for respondents in Latin American countries, and to allow a quicker and easier way for respondents to reply. It has two sections: the first section deals with enforcement of accounting standards; the second section focuses on the level of investor protection. We investigate the institutional setting by evaluating the current level of enforcement and investor protection of these countries as well as if they have changed around the IFRS adoption.

⁷ World Bank. (2008) Report on the observance of standards and codes (ROSC) [online]. Available from: <http://www.worldbank.org/ifa/Part%20I%20--%20Review%20of%20the%20Accounting%20and%20Auditing%20Environment.pdf>.

At section one, questions 1 and 2 are based on Brown et al. (2014) and address whether there is a government body or a regulator monitoring the financial reporting of public companies. The third question is based on the work of Hope (2003); it addresses whether there were any companies that did not follow the IFRS guidelines even under mandatory adoption. Questions 4, 5 and 6 are designed based on the World Bank (2008) report. Questions 4 and 5 are designed to discover the penalties or consequences that each country issues for firms and managers if they do not comply with accounting rules in force. Moreover, it also helps to identify when the country enacted these rules. Emerging markets may only have enacted these laws more recently in comparison with developed markets. This is due to the level of development of local stock markets in comparison with those in developed markets. Question 6 investigates whether these penalties turned to be stricter after the adoption of IFRS. Question 7 is based on the rule of law of Hope (2003) and addresses whether the regulator has taken judicial action against a firm's non-compliant financial statement. Finally, the last question of the enforcement section measures whether there was an increase in the number of staff members responsible for monitoring the statements of public companies. This question is designed based on the enforcement index of Brown et al. (2014).

At the investor protection section, questions 9 to 19 are designed based on La Porta et al. (1998) and Hope (2003). Question 9 seeks the answer to the type of shareholder voting system in each country as the voting mechanism could be unbalanced (shares that have more voting rights) or balanced (one-share-one-vote). La Porta et al. (1998) argue that the preferred mechanism to ensure the investor protection is the one-share-one-vote system. This is preferable because there are companies that issue nonvoting shares, founders' shares with extreme voting rights and shares that may have more voting rights according to the period for which one shareholder has held

them. Thus, the one-share-one-vote system is preferable in order to guarantee equal and democratic rights. Questions 10 and 11 focus on the easiness of the voting system; they investigate whether the shareholder can vote through the mail or if the shareholder needs to present himself at the shareholders' meeting in order to be eligible to vote. The shareholders' protection is higher if there are fewer constraints within the voting system. Question 12 evaluates whether the minority shareholders have any right to challenge a director's decision in court; if they have the right to challenge his decisions, this is a sign of higher shareholder protection. Question 13 focuses on the minimum requirement of share capital needed in order to call for a shareholder meeting. A lower percentage of share capital needed indicates higher investor protection. That is, as the requirement is lower, shareholders can exercise their rights with greater ease. Question 14 evaluates whether there is a minimum mandatory dividend. La Porta et al. (1998) argue that countries with low investor protection mechanisms may require a minimum mandatory dividend in order to guarantee investors' rights. Thus, countries with stronger investor protection mechanisms may not require a minimum mandatory dividend because they have other mechanisms to safeguard the investors' interests. Questions 15 and 16 evaluate whether there was any change or increase in the shareholder's protection after the adoption of IFRS. Finally, questions 17 to 19 investigate the insider trading laws and enforcement of these laws. Question 17 addresses whether there were any insider trading activities in recent years. Question 18 discusses whether the regulator prosecuted the people involved in these insider trading activities. It is worth noting that countries with higher investor protection have a history where the regulator prosecuted the people involved in such activities. Question 19 investigates whether there were any convictions for those involved in insider trading activities.

3.1.1 Results of the questionnaire – Enforcement

In this section we comment the main results of the questionnaire due to space, but all results are summarized and presented in Appendix 2.

With regard to questions 1 and 2, all five countries have had a securities market regulator monitoring the financial reporting of public companies, and this has not changed since the mandatory IFRS adoption. Regarding question 3, the Securities and Exchange Commission officers indicated that there are firms which did not comply with the IFRS requirements, which suggests a weak enforcement of accounting standards in these countries as also documented in Brown et al. (2014).

Referring to question 4, all countries can issue fines and charges if a firm or manager does not comply with the accounting standards in force; however, only in Brazil the Securities and Exchange Commission has the power to suspend temporarily the manager from his role. This indicates that Brazil has a stronger enforcement in comparison to other countries. The legislations concerning question 5 are listed on appendix 2 and the replies from question 6 indicate that there has been no change in the penalties and consequences for firms' and managers' noncompliance behaviours since the adoption of IFRS. Regarding the number of firms caught by the regulator in the post-IFRS period only in Brazil there were a few companies caught by the regulator. With regard to question 8, no country reported an increase in staff members responsible for monitoring the implementation of IFRS concurrent with the adoption of IFRS.⁸

⁸ There was an increment in staff members responsible for assisting in the monitoring of the accounting standards in force after two and two and a half years of the adoption of IFRS in Brazil and in Peru, respectively. Brazil hired 3 extra staff members in January of 2012, but they have been relocated to other roles in due course; by 2015, the number of staff responsible for the enforcement of the standards increased by only 1 member, and in Peru, 1 extra staff member was hired in July 2014. Overall, as the increment was years after the adoption of the standards and considering that staff has also been responsible for other roles, this is not considered as a significant change.

Overall, the results indicate that the enforcement of these countries is weak; however, Brazil has a stronger enforcement in comparison with the other sampling countries, which is consistent with the findings of Brown et al. (2014). Additionally, according to the results of questions 2, 6 and 8, there were no concurrent changes in enforcement alongside the adoption of IFRS.

3.1.2 Results of the questionnaire - Investor protection mechanisms

Regarding questions 9 and 10, all five countries adopt the system “one-share-one-vote”; however, only in Peru and Chile the shareholder can vote through the mail. Thus, it is worth noting that Peru and Chile have higher investor protection mechanisms in comparison to the other Latin American countries with regard to question 10. Regarding question 11, only in Argentina the shareholder, in order to be eligible to vote, needs to deposit his shares in the company prior to a shareholder meeting. As a result, this represents a higher constraint in relation to other Latin American countries, which indicates that the investor protection mechanism in Argentina is lower than the other countries.

Referring to question 12, all countries allow the minority shareholders to prosecute and challenge the directors’ decision in the court of justice. Argentina, Brazil, Chile and Mexico, however, define that it is required at least 5% of share capital in order to challenge a director’s decision in court, whereas Peru does not require a minimum percentage of share capital. Thus, Peru has a higher investor protection in comparison to the other Latin American countries with regard to this question. With regard to question 13 (percentage of share capital needed to call for a shareholder meeting), Argentina requires 60% in the first call and 30% in the second call; Brazil and Chile require 10%, Mexico specifies 75%, unless defined otherwise in the firm’s statute,

whereas Peru requires 20%. As Mexico demands the highest percentage, it is the country with the lowest investor protection mechanism in respect to this issue.

Regarding the mandatory dividend (question 14), Argentina does not specify a minimum, whereas Brazil, Chile and Mexico specify 25%, 30% and 5%, respectively. Moreover, Peru only defines 50% of mandatory dividends if 20% of the shareholders demand it. Thus, as Argentina and Peru do not specify a minimum percentage, they are likely to have stronger mechanisms to safeguard the investors' capital.

In relation to questions 15 and 16, it is worth noting that none of the countries have improved their investor protection mechanisms since the IFRS adoption. This allows this study to pinpoint with greater precision the impact of IFRS and firm-level incentives.

With regard to question 17, only Brazil and Chile have informed the number of insider trading activities caught by the regulator⁹. In Brazil, the regulator caught the first case of insider trading in 2009, and the first conviction was only in November 2016. In Brazil and Chile, the replies of questions 18 and 19 illustrate that it is not the responsibility of the regulator to take further actions to court, but from the public ministry. Moreover, only in Brazil the regulator has prosecuted companies (please refer to Appendix 2 for the detailed number of firms per year), whereas the regulators from the other countries have not provided an answer to these questions.

This illustrates that the investor protection mechanisms in Latin American countries are weak, and it is consistent with the investor ranking of La Porta et al. (1998) and the World Bank's ranking. It is worth noting though, that Brazil, Chile and Peru have stronger investor protection mechanisms than Argentina and Mexico.

⁹ Please refer to the footnote of appendix 2 for the detailed number of firms.

In conclusion, our findings show that the institutional settings of these countries are weak, which is consistent to previous research (La Porta et al. 1998, Brown et al., 2014) and have not been substantially improved concurrent with the adoption of IFRS. This shows that the institutional environment will not affect our inferences from the effect of the IFRS adoption. As these countries have a slightly different institutional setting: Brazil has the strongest enforcement among these countries and Brazil, Chile and Peru have stronger investor protection mechanisms. In order to control for this, the country fixed effects are implemented in our econometric design presented in the following sections.

3.2 Measures of analysts' information environment

To test *H1*, we adopt four metrics to evaluate whether the analysts' information environment improved after the IFRS adoption. According to Lang and Lundholm (1996) and Panaretou *et al.* (2013), our first metric is the earnings' unsigned forecast error, which is calculated as follows:

$$FE_{i,t}^t = \left| \left(ActualEPS_{i,t}^t - MeanforecastEPS_{i,t}^t \right) / SharePrice_{i,t-1} \right| \quad (1)$$

where $FE_{i,t}^t$ denotes current-year (the superscript t) earnings' forecast error for firm i in year t ; $MeanforecastEPS_{i,t}^t$ is the mean of current-year earnings per share for firm i in year t . $ActualEPS_{i,t}^t$ is the realised earnings per share collected from the Actual file of the Institutional Brokers' Estimate System (I/B/E/S). $SharePrice_{i,t-1}$ is the share price in year $t-1$.¹⁰ We use the forecasts issued during the six months prior to the earnings

¹⁰ We also calculate the median of current-year and one-year-ahead earnings forecasts to estimate the forecast error, as it minimizes potential problems associated with mean calculations due to outliers (Preiato *et al.*, 2015). We reach similar results and the same conclusion.

announcement date of each firm¹¹. For further clarification on these calculations and the following calculations, please refer to Figure 1. We calculate the one-year-ahead earnings (the superscript $t+1$) forecast error for firm i in year t ($FE_{i,t}^{t+1}$) in the same fashion.

The second metric is the dispersion of current-year earnings forecasts ($DISPFE_{i,t}^t$) of firm i in year t . According to Byard *et al.* (2011) and Preiato *et al.* (2015), this is equal to the standard deviation of forecasted *EPS* scaled by the previous share price in model (2)¹²:

$$DISPFE_{i,t}^t = StDev\left(\text{forecast}EPS_{i,t}\right) / \left(SharePrice_{i,t-1}\right) \quad (2)$$

We also calculate the dispersion of one-year-ahead earnings forecasts ($DISPFE_{i,t}^{t+1}$) of firm i in year t in the same fashion. The third metric is the logarithm of the number of analysts following a firm, according to model (3).

$$LOGFOLLOW_{i,t}^t = \log\left(FOLLOW_{i,t}^t\right) \quad (3)$$

where $FOLLOW_{i,t}^t$ denotes the number of analysts following firm i that issues current-year forecast (the superscript t) in year t (the subscript t). We calculate this variable for analysts following firm i that issue one-year-ahead forecasts in the same fashion.

The fourth metric is the dispersion of current-year target price forecasts of firm i in year t ($DISPFETP_{i,t}^t$) defined according to model (4).

$$DISPFETP_{i,t}^t = StDev\left(\text{forecast}TP_{i,t}\right) / \left(\text{Meanforecast}TP_{i,t}\right) \quad (4)$$

¹¹ We try to use only one month or three months before the earnings announcement date, but the number of observations reduces significantly, so we adopt the 6 months period.

¹² We also derive similar results scaling for the absolute mean of the forecast as in Lang and Lundholm (1996) and Panaretou *et al.* (2013). Additionally, we set a requirement of a minimum of two analysts issuing forecasts for a firm, in order to calculate analysts' forecasts dispersion.

where $StDev (forecastTP_{i,t})$ denotes the standard deviation of current-year target price of firm i in year t ; $MeanforecastTP_{i,t}$ is the absolute mean of target price forecasts of firm i in year t .

We calculate forecast errors and dispersion of forecasts according to forecast observations issued within the last six months before the earnings announcement date of firm i in year t . Other market and accounting variables are calculated according to the financial year of firm i . Figure 1 presents the calculations of variables.

[Figure 1 here]

3.3 Overall impact of IFRS

To examine the overall impact of mandatory adoption of IFRS on analysts' information environment due to hypotheses $H1a$, $H1b$, $H1c$ and $H1d$, we report seven regressions estimates according to models (5), (6) and (7) in the following:

$$INFENV_{i,t}^t = \alpha + \beta_1 IFRS_{i,t} + \beta_2 EPS\Delta_{i,t} + \beta_3 LOGFOLLOW_{i,t}^t + \beta_4 R_{i,t-1} + \beta_5 SIZE_{i,t} + \beta_6 LOGHORIZON_{i,t}^t + \sum_{d=1}^{12} \beta_{d+6} NAICS_i + \sum_{c=1}^5 \beta_{c+18} COUNTRY_i + \varepsilon_{i,t} \quad (5)$$

At model (5), $INFENV_{i,t}^t$ is a common variable, which denotes current-year earnings forecast error ($FE_{i,t}^t$), one-year-head earnings forecast errors ($FE_{i,t}^{t+1}$), dispersion of current-year earnings forecast error ($DISPFE_{i,t}^t$), or one-year-ahead earnings forecast error ($DISPFE_{i,t}^{t+1}$). $IFRS_{i,t}$ is equal to 1 if the forecasts are derived after mandatory IFRS adoption and is equal to 0 otherwise. If the mandatory adoption of IFRS improves analysts' information environment, β_1 is expected to be negatively significant. The following variables are control variables. $EPS\Delta_{i,t}$ is the change in reported earnings of firm i from year $t-1$ to t scaled by the share price in year $t-1$ (Liang and Riedl, 2014). It measures firms' performance and thereby affects analysts' forecast errors or forecast

dispersion (Liang and Riedl, 2014). $R_{i,t-1}$ is the stock return of firm i in year $t-1$. It measures whether analysts incorporate all previous stock returns in their forecasts. $SIZE_{i,t}$ is the log of the market value of equity. This is because there are more analysts following large firms, which therefore provide more information. $LOGHORIZON_{i,t}^t$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date, for firm i in year t . It measures the time horizon, which can affect the accuracy of the forecast. Analysts' forecast error and dispersion may increase when the forecast horizon increases. There are twelve North American Industry Classification System ($NAICS_i$) groups for our industrial firms. So, we set twelve industry dummies: Dummy 1: Sector 11, agriculture, forestry, fishing and hunting; Dummy 2: Sector 21, mining, quarrying, oil and gas extraction; Dummy 3: Sector 22, utilities; Dummy 4: Sector 23, construction; Dummy 5: Sector 31-33, manufacturing; Dummy 6: Sector 42, wholesale trade; Dummy 7: Sector 44-45, retail trade; Dummy 8: Sector 48-49, transportation and warehousing; Dummy 9: Sector 51, information; Dummy 10: Sector 54, professional scientific and technical services; Dummy 11: Sector 72, accommodation and food services; Dummy 12: Sector 81, other services (excluding public administration, repair and maintenance). These industry dummies control for the effect of different operating risks in different industries and the effect of different regulations. $COUNTRY_i$ is a dummy variable for each country. It captures the effect of the institutional setting of each country¹³. The results are similar if we include the enforcement proxy of Brown *et al.* (2014).

$$LOGFOLLOW_{i,t}^t = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+2} NAICS_i \quad (6)$$

$$+ \sum_{c=1}^5 \beta_{c+14} COUNTRY_i + \varepsilon_{i,t}$$

Model (6) assesses the impact of mandatory adoption of IFRS on the log of the number of analysts issuing current-year earnings forecasts for the firms in our sample ($LOGFOLLOW_{i,t}^t$) due to hypothesis *H1c*. We also assess the impact considering the analysts that issue one-year-ahead earnings forecasts ($LOGFOLLOW_{i,t}^{t+1}$). The variables are defined in the above models.

$$\begin{aligned} DISPFETP_{i,t}^t = & \alpha + \beta_1 IFRS_{i,t} + \beta_2 EPS\Delta_{i,t} + \beta_3 LOGFOLLOWTP_{i,t}^t + \beta_4 R_{i,t-1} \\ & + \beta_5 SIZE_{i,t} + \beta_6 LOGHORIZONT_{i,t}^t + \sum_{d=1}^{12} \beta_{d+6} NAICS_i \\ & + \sum_{c=1}^5 \beta_{c+18} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (7)$$

Model (7) investigates the impact of IFRS on the dispersion of current-year target price forecasts ($DISPFETP_{i,t}^t$) due to hypothesis *H1d*. $LOGFOLLOWTP_{i,t}^t$ denotes the log of the number of analysts issuing current-year target price forecasts. $LOGHORIZONT_{i,t}^t$ is the log of 1 plus the mean of the number of days between each analyst's target price forecast, and the earnings announcement date for firm *i* in year *t*.

3.4 Firm-level reporting incentives

Our second objective is to investigate whether firms with stronger incentives to adopt IFRS would perceive a higher enhancement in analysts' information environment, which matches our second hypothesis *H2*. Earlier research (e.g. Barth *et al.*, 2008; Byard *et al.*, 2011, Christensen *et al.*, 2013) indicates that: (i) highly profitable firms, (ii) firms that have higher growth opportunities, (iii) highly leveraged firms, (iv) greatly internationalized firms, and (v) firms audited by high-quality auditors, have stronger

incentives to produce high-quality financial reports. As such, we follow the model of Byard *et al.* (2011) by introducing the above five factors into the models (8), (9) and (10). They are as follows.

$$\begin{aligned} INFENV_{i,t}^t = & \alpha + \beta_1 AUD_{i,t} + \beta_2 BTMV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NUMEX_{i,t} + \beta_5 ROA_{i,t} + \beta_6 EPS\Delta_{i,t} \\ & + \beta_7 LOGFOLLOW_{i,t}^t + \beta_8 R_{i,t-1} + \beta_9 SIZE_{i,t} + \beta_{10} LOGHORIZON_{i,t}^t \\ & + \sum_{d=1}^{12} \beta_{d+10} NAICS_i + \sum_{c=1}^5 \beta_{c+22} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (8)$$

$$\begin{aligned} LOGFOLLOW_{i,t}^t = & \alpha + \beta_1 AUD_{i,t} + \beta_2 BTMV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NUMEX_{i,t} + \beta_5 ROA_{i,t} \\ & + \beta_6 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+6} NAICS_i + \sum_{c=1}^5 \beta_{c+18} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (9)$$

$$\begin{aligned} DISPFETP_{i,t}^t = & \alpha + \beta_1 AUD_{i,t} + \beta_2 BTMV_{i,t} + \beta_3 LEV_{i,t} + \beta_4 NUMEX_{i,t} + \beta_5 ROA_{i,t} \\ & + \beta_6 EPS\Delta_{i,t} + \beta_7 LOGFOLLOWTP_{i,t}^t + \beta_8 R_{i,t-1} + \beta_9 SIZE_{i,t} \\ & + \beta_{10} LOGHORIZONTTP_{i,t}^t + \sum_{d=1}^{12} \beta_{d+10} NAICS_i + \sum_{c=1}^5 \beta_{c+22} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (10)$$

where $AUD_{i,t}$ equals one if one of the Big 4 auditors audits firm i in year t , otherwise it equals 0. $BTMV_{i,t}$ is the book to market value ratio. It is a proxy for growth opportunities. $LEV_{i,t}$ is equal to total liabilities divided by total assets. $NUMEX_{i,t}$ is the number of foreign stock markets that a firm i lists on. It denotes the firm's internationality. $ROA_{i,t}$ is the ratio of net income over total assets.

We expect that the coefficients on $AUD_{i,t}$, $LEV_{i,t}$, $ROA_{i,t}$ and $NUMEX_{i,t}$ in the above models will be significantly negative, whereas the coefficient of $BTMV_{i,t}$ will be significantly positive if a firm has stronger reporting incentives and can improve the analysts' information environment.

Next, we investigate whether the adoption of IFRS can improve analysts' information environment in Latin American countries with weak institutional settings after controlling for the effect of firm-level reporting incentives. Therefore, we introduce the IFRS dummy in the following models (11), (12) and (13):

$$\begin{aligned} INFENV_{i,t}^t = & \alpha + \beta_1 IFRS_{i,t} + \beta_2 AUD_{i,t} + \beta_3 BTMV_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NUMEX_{i,t} \\ & + \beta_6 ROA_{i,t} + \beta_7 EPS\Delta_{i,t} + \beta_8 LOGFOLLOW_{i,t}^t + \beta_9 R_{i,t-1} + \beta_{10} SIZE_{i,t} \\ & + \beta_{11} LOGHORIZON_{i,t}^t + \sum_{d=1}^{12} \beta_{d+11} NAICS_i + \sum_{c=1}^5 \beta_{c+23} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (11)$$

$$\begin{aligned} LOGFOLLOW_{i,t}^t = & \alpha + \beta_1 IFRS_{i,t} + \beta_2 AUD_{i,t} + \beta_3 BTMV_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NUMEX_{i,t} \\ & + \beta_6 ROA_{i,t} + \beta_7 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+7} NAICS_i + \sum_{c=1}^5 \beta_{c+19} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (12)$$

$$\begin{aligned} DISPFETP_{i,t}^t = & \alpha + \beta_1 IFRS_{i,t} + \beta_2 AUD_{i,t} + \beta_3 BTMV_{i,t} + \beta_4 LEV_{i,t} + \beta_5 NUMEX_{i,t} \\ & + \beta_6 ROA_{i,t} + \beta_7 EPS\Delta_{i,t} + \beta_8 LOGFOLLOWTP_{i,t}^t + \beta_9 R_{i,t-1} + \beta_{10} SIZE_{i,t} \\ & + \beta_{11} LOGHORIZONTPT_{i,t}^t + \sum_{d=1}^{12} \beta_{d+11} NAICS_i + \sum_{c=1}^5 \beta_{c+23} COUNTRY_i + \varepsilon_{i,t} \end{aligned} \quad (13)$$

We expect that the coefficient on $IFRS_{i,t}$ will remain consistent with those coefficients in models (5), (6) and (7).

3.5 Analysis of the precision of public, private and consensus information

The above models demonstrate the impact of mandatory adoption of IFRS on analysts' information environment. In this section we examine whether mandatory

adoption of IFRS affects the precision of public, private, and consensus information. Models to investigate the precision of information started with Barry and Jennings (1992) and Abarbanell *et al.* (1995). Afterwards, Barron *et al.* (1998) extended their measure in order to model the type and the precision of information that analysts use to issue their forecasts. Barron *et al.* (1998) argue that those analysts' forecast errors are composed of a common error and an idiosyncratic error. The common error reflects the error in the public information which analysts rely upon, whereas the idiosyncratic error reflects the error in the private information that analysts rely upon¹⁴. As such, we examine the precision of information after mandatory IFRS adoption by adopting the approach of Barron *et al.* (1998) and Byard *et al.* (2011), which is detailed as follows:

$$PUBLIC_{i,t} = \frac{SE_{i,t} - D_{i,t}/N_{i,t}}{[(1 - 1/N_{i,t})D_{i,t} + SE_{i,t}]^2} \quad (14)$$

$$PRIVATE_{i,t} = \frac{D_{i,t}}{[(1 - 1/N_{i,t})D_{i,t} + SE_{i,t}]^2} \quad (15)$$

$$CONSENSUS_{i,t} = \frac{PUBLIC_{i,t}}{PUBLIC_{i,t} + PRIVATE_{i,t}} \quad (16)$$

where $D_{i,t}$ is the variance of analysts' forecasts for firm i in year t . $SE_{i,t}$ is the squared error in the mean forecast, and $N_{i,t}$ is the number of forecasts for firm i in year t (Byard *et al.*, 2011). Different from the approach of Barron *et al.* (1998) and Byard *et al.* (2011), we standardize¹⁵ the variables of $PUBLIC_{i,t}$, $PRIVATE_{i,t}$, and $CONSENSUS_{i,t}$ after the calculations of models (14), (15) and (16). This is because the denominator in models (14) and (15) is very small in comparison to the numerator, and produces very

¹⁴ Note that the measure for $PUBLIC_{i,t}$ reflects the error arising from both common and private information, whereas the measure for $PRIVATE_{i,t}$ reflects the forecast dispersion, which only reflects the idiosyncratic error arising from private information (Barron *et al.*, 1998).

¹⁵ The standardization consists of subtracting for each variable the mean of the variable and scaling by its standard deviation.

large numbers and affects the scale of the variables in the following model (17).¹⁶ After this standardization, we estimate the association between $IFRS_{i,t}$, and $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$ via model (17). $PRECISION_{i,t}$ is a common variable, which denotes $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$.

$$PRECISION_{i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+2} NAICS_d + \sum_{c=1}^5 \beta_{c+14} COUNTRY_c + \varepsilon_{i,t} \quad (17)$$

To maintain consistency, $SIZE_{i,t}$ is also standardized in the same fashion.¹⁷ We predict that the coefficient of $IFRS_{i,t}$ associated with $PUBLIC_{i,t}$ or $CONSENSUS_{i,t}$ is positive, which indicates an improvement in the precision of public information or consensus information brought about by the mandatory adoption of IFRS. Analysts may still rely on private information, but we do not expect that IFRS will increase the precision of private information; therefore, we expect the association between $IFRS_{i,t}$ and $PRIVATE_{i,t}$ to be insignificant. Appendix 1 presents the definition of the variables.

4. Sample and data

In this section we illustrate the sample selection criteria, as well as the data sources and the descriptive statistics of our data. Finally, we present univariate analysis

¹⁶ This study finds similar results by following the method of Byard et al. (2011), and by bootstrapping the sample 1000 times.

¹⁷ As in Byard et al. (2011), $SIZE_{i,t}$ is used as the only control variable because it is the variable that has higher influence over the quantity and quality of the information available. Another variable such as the number of analysts following could also affect the precision of information; the inferences are similar if $LOGFOLLOW_{i,t}$ is included.

regarding the effect of firm-level reporting incentives on analysts' information environment.

4.1 Sampling criteria

We consider only industrial firms listed on Latin American stock exchanges. We exclude banks and financial institutions as their accounting standards are different to those of industrial firms as well as we exclude early adopters by manually checking the IFRS adoption date of each firm. We choose the sample period from 1st January 2003 to 31st December 2015 after referring to the official dates of IFRS adoption in Latin American countries reported on the IFRS website.¹⁸ In this study, we focus on four years before and four years after the official dates of the mandatory adoption of IFRS in each country.

Given the above criteria for data collection our sample comprises of firms from Argentina, Brazil, Chile, Mexico, and Peru, as firms from other Latin American countries adopted IFRS after 2014, or their data in the sample period is not available.

4.2 Data Source

Analysts' forecast data is collected from the Detail File of I/B/E/S. The actual earnings per share are collected from the Actual File of I/B/E/S. The market and accounting data are from the DataStream database. Although I/B/E/S has analysts' EPS forecasts since 1980, its coverage for Latin American countries is limited because analysts tend to follow only large firms with higher trading volumes (Hayes, 1998). The number of analysts following firms in Latin America is therefore lower in comparison with developed nations. After the introduction of IFRS, the average number of analysts following firms doubled for the five countries of our sample.

¹⁸ <http://www.ifrs.org/Use-around-the-world/Documents/Jurisdiction-profiles/>

4.3 Sample Description

We find 618 firms from the Detail File of I/B/E/S. However, excluding the financial sector as well as early adopters leaves us with 534 companies. Panel A of Table 1 reports the sample structure of these five countries. There are 97 firms for which all required data is available in at least one of the eight years around the official date of IFRS adoption. Panel B shows that there is 1 firm in Argentina, 76 firms in Brazil, 17 firms in Chile, 3 firms in Mexico, and no firms from Peru. The total number of firms in our sample is therefore 97.¹⁹ Considering the small sample size, we also conduct another set of empirical analysis referring to the Summary File of I/B/E/S, which contains 285 firms with data available regarding the earnings' forecasts (accuracy, dispersion and number of analysts following) as illustrated in Panel C. Of the 285 firms, 278 have target price forecasts. These analyses are not reported, but are available upon request. We reach very similar results and the same conclusion as those reported in the following sections²⁰.

[Table 1 here]

4.4 Descriptive statistics

Table 2 shows that the current-year earnings forecast error ($FE_{i,t}^t$) decreased following the IFRS adoption, and that the difference between the pre- and post-adoption period is significant at 5%. In contrast, the one-year-ahead earnings forecast error ($FE_{i,t}^{t+1}$) and the dispersion of current-year earnings forecasts ($DISPFE_{i,t}^t$) are lower following mandatory IFRS adoption; however, the difference is not statistically

¹⁹ This is the number of firms with available data for all control variables regarding earnings forecasts. The number of firms for the other analyses is different due to data availability. For the detailed number of firms with data available for each analysis, please refer to the information available at the bottom of each table.

²⁰ The models adopted in this set of analyses differ slightly from the ones reported in the paper. As this is the summary file, we do not have the forecast horizon ($LOGHORIZON_{i,t}^t$; $LOGHORIZON_{i,t}^{t+1}$; $LOGHORIZONTP_{i,t}^t$) as a control variable, because this information is not available in I/B/E/S.

significant. Furthermore, the dispersion of one-year-ahead earnings forecasts ($DISPFE_{i,t}^{t+1}$) and the dispersion of current-year target price forecasts ($DISPFETP_{i,t}^t$) decreased in the post-adoption period and the difference between the two periods is statistically significant at 5%. $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$ are higher following mandatory IFRS adoption and these results are statistically significant at 1%. This suggests that the number of analysts following the firms increased in the post-adoption period. $PUBLIC_{i,t}$ and $CONSENSUS_{i,t}$ increased, and this increase is statistically significant at 10% and 1% respectively. These results suggest that the precision of public and consensus information increased following IFRS adoption. However, as there is no significant difference in $PRIVATE_{i,t}$ across the two periods, this suggests that the precision of private information did not increase following IFRS adoption, which is in line with our prediction. Overall, the results suggest that analysts' information environment improved following mandatory IFRS adoption.

Regarding the incentive variables, only the difference in the book-to-market value ($BTMV_{i,t}$) is statistically significant at 5%. For the control variables, the differences in $LOGHORIZON_{i,t}^t$, $LOGHORIZON_{i,t}^{t+1}$ and $LOGHORIZONTP_{i,t}^t$ are statistically insignificant over the 8-year time span. This suggests that the analysts' pattern of issuing forecasts did not change. The differences in $LOGFOLLOW_{i,t}^t$, $LOGFOLLOW_{i,t}^{t+1}$ and $LOGFOLLOWTP_{i,t}^t$ between the pre- and post-IFRS adoption period are statistically significant at 1%. This indicates that the number of analysts following Latin American firms is higher in the post-adoption period. We find the same significant changes in the logarithm of market value ($SIZE_{i,t}$) and in $EPS\Delta_{i,t}$.

[Table 2 here]

4.5 Univariate analysis for firm-level reporting incentives

To examine whether firm-level reporting incentives affect the analysts' information environment, we compare analysts' earnings forecast errors and the dispersion of earnings forecasts between firms with strong reporting incentives and firms with weak reporting incentives: (a) in the 8 years around the IFRS adoption date and (b) in the 4 years after the IFRS adoption date. We then focus on (c) firms with strong reporting incentives in the 8 years around the IFRS adoption date specifically. We classify the firms as having strong or weak reporting incentives based on the following variables: (i) firms audited by Big 4 audit firms versus other audit firms, $AUD_{i,t}$; (ii) firms with more international listings versus no international listings, $NUMEX_{i,t}$; (iii) firms which are more profitable versus those which are less profitable, $ROA_{i,t}$; (iv) firms with a greater debt ratio versus a lower debt ratio, $LEV_{i,t}$; and (v) firms with more growth opportunities versus fewer growth opportunities, $BTMV_{i,t}$. We classify a firm as having strong reporting incentives if it is audited by a Big 4 auditing firm ($AUD_{i,t}$) or lists on foreign stock exchanges ($NUMEX_{i,t}$). It is classified as having weak reporting incentives if it is audited by other auditing firms, or only lists on domestic stock exchanges. Similarly, we classify a firm as having strong reporting incentives if its $ROA_{i,t}$, or $LEV_{i,t}$ are above the average values of these variables in the same industry, otherwise it is classified as having weak reporting incentives. For $BTMV_{i,t}$, a firm is classified as having strong reporting incentives if it has a lower than average value of this variable in the same industry, otherwise it is classified as having weak reporting incentives.

Panel A of Table 3 reports that the differences in the mean of current-year forecast errors ($FE'_{i,t}$) between firms with strong and weak incentives in the 8 years around the IFRS adoption are statistically significant at 1% and 10% respectively. Nevertheless, the mean of current-year forecast errors for highly leveraged firms and firms with more

growth opportunities is bigger, and the difference is significant at 1%. This implies that analysts find it challenging to issue forecasts for these firms. This may be because highly leveraged firms may defer the recognition of bad news in case it does not help to improve the firms' financial position, whereas there are higher expectations (bigger room) for firms with more growth opportunities, which can affect the forecasting ability of analysts.

Panel B of Table 3 reports that the differences in the mean of current-year forecast errors ($FE_{i,t}^t$) between firms with strong and weak incentives in the 4 years after the IFRS adoption date are statistically significant at 1%, except for firms classified by $NUMEX_{i,t}$ which is not statistically significant. This suggests that the current-year earnings forecast errors for firms with strong incentives are significantly lower than those for firms with weak incentives in the 4 years after the IFRS adoption. The results for firms classified by $LEV_{i,t}$ and $BTMV_{i,t}$ are similar to those in Panel A.

Panel C of Table 3 reports that firms with strong reporting incentives have current-year forecast errors which are significantly lower in the post-IFRS adoption compared to pre-IFRS adoption at 1%, except those firms classified by $AUD_{i,t}$. This suggests that for firms with strong incentives, there is a further enhancement in analysts' information environment in the post-adoption period. Therefore, firms' reporting incentives affect analysts' information environment beyond the impact of IFRS.

[Table 3 here]

Table 4 reports the changes in the dispersion of current-year earnings forecasts ($DISPFE_{i,t}^t$) for firms with strong and weak reporting incentives in the same fashion as Table 3. The results are consistent with those in Table 3.

We undertake the same analysis for one-year-ahead earnings forecast errors, dispersion of one-year-ahead earnings forecast errors, and dispersion of current-year

target price. The results are highly consistent with those in Tables 3 and 4. We do not report these results, but they are available upon request. They confirm that firms' reporting incentives play a role in shaping the analysts' information environment. The above is based on univariate analysis, and will be confirmed using multivariate analysis in the next section.

[Table 4 here]

5. Results

This section firstly explores the overall impact of mandatory adoption of IFRS on analysts' information environment. Afterwards, we investigate whether firm-level reporting incentives can influence the information environment, and whether IFRS can affect analysts' information environment after controlling for firm-level reporting incentives. Lastly, we report the results regarding whether the precision of public, private and consensus information improved after the IFRS adoption.

5.1 Overall impact of mandatory adoption of IFRS

Table 5 reports the results of estimating models (5), (6) and (7), which regress the analysts' information environment (measured by $FE_{i,t}^t$, $FE_{i,t}^{t+1}$, $DISPFE_{i,t}^t$, $DISPFE_{i,t}^{t+1}$, $DISPFETP_{i,t}^t$, $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$) on $IFRS_{i,t}$ and the control variables. These results demonstrate whether the mandatory adoption of IFRS improves the analysts' information environment in Latin American countries, where the institutional settings of enforcement and investor protection are weak.

The results show that the coefficients of $IFRS_{i,t}$ are significantly negative for the regressions on $FE_{i,t}^t$ and $DISPFE_{i,t}^t$, as well as for the regression on $DISPFETP_{i,t}^t$ at 5% and 10%, respectively. These results indicate that analysts' forecast errors, as well as

analysts' forecast dispersion, decrease after mandatory IFRS adoption. In contrast, for the regressions on $FE_{i,t}^{t+1}$ and $DISPFE_{i,t}^{t+1}$, the coefficients of $IFRS_{i,t}$ are insignificantly positive. This indicates that there is no significant change in analysts' one-year-ahead earnings forecast errors, and in analysts' one-year-ahead forecast dispersion, in the post-adoption period. This may be because analysts already digest the effect of IFRS adoption on firms' reporting quality in the year of adoption, and expect that the improved accounting information quality will be maintained in the future. In other words, they already reflect this in one-year-ahead earnings forecasts.

In the regressions of $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$, the estimated coefficients on $IFRS_{i,t}$ are significantly positive at 1%. This suggests that, after Latin American firms adopt IFRS, the number of analysts following firms increases significantly. This may be due to the increased disclosure of financial information required by IFRS. In summary, the above results indicate that analysts' information environment improves in the post-adoption period.

The coefficients on $SIZE_{i,t}$ are statistically significant in the regressions of $FE_{i,t}^t$, $DISPFE_{i,t}^t$ and $DISPFE_{i,t}^{t+1}$ at 10% respectively. This suggests that the current-year earnings forecast error of the analysts following larger firms is slightly higher than for analysts following smaller firms, whereas their dispersion is lower. Moreover, the coefficients on $SIZE_{i,t}$ in the regressions of $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$ are significantly positive at 1%, which illustrates that larger firms have more analysts following them. The estimated coefficients on $R_{i,t-1}$ are significantly positive at 5% and 1% in the regressions on $DISPFE_{i,t}^{t+1}$ and $DISPFETP_{i,t}^t$. This suggests that analysts use the stock returns to derive their forecasts. However, it also illustrates that the more analysts rely on stock returns, the more their disagreement increases. The estimated coefficient on $LOGFOLLOW_{i,t}^t$ is only significant in the regression on $DISPFE_{i,t}^t$. This

coefficient is significantly positive, which is contrary to our predictions. However, it is worth noting that more analysts following firms creates room for increased disagreement among them (Houque *et al.*, 2014), and this could explain these results. Lastly, the estimated coefficient of $LOGHORIZONTP_{i,t}^t$ is significantly positive at 10%, which indicates that the dispersion of target price forecasts is higher when the forecast horizon is longer. The above results are consistent with hypotheses $H1a$, $H1b$, $H1c$, and $H1d$.

[Table 5 here]

5.2 The impact of firm-level reporting incentives on analysts' information environment

In this section we investigate how firm-level reporting incentives affect analysts' information environment, based on models (8), (9) and (10), by regressing the analysts' information environment (measured by $FE_{i,t}^t$, $FE_{i,t}^{t+1}$, $DISPFE_{i,t}^t$, $DISPFE_{i,t}^{t+1}$, $DISPFETP_{i,t}^t$, $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$) on variables that denote firm-level reporting incentives ($AUD_{i,t}$, $BTMV_{i,t}$, $LEV_{i,t}$, $NUMEX_{i,t}$, $ROA_{i,t}$) and the control variables.

Table 6 shows that $AUD_{i,t}$ is significantly associated with $LOGFOLLOW_{i,t}^{t+1}$ at 1%, and that $BTMV_{i,t}$ is significantly associated with $DISPFE_{i,t}^t$, $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$ at 10%, 1% and 5% respectively. These findings suggest that the dispersion of current-year earnings forecasts decreases for firms with greater growth opportunities, whereas there are more analysts following firms with lower growth opportunities. The coefficient of $LEV_{i,t}$ is significantly negative in the regression of $DISPFETP_{i,t}^t$ at 1%, which indicates that the dispersion of current-year target price forecasts is higher for highly leveraged firms. $NUMEX_{i,t}$ has a significantly negative

coefficient at 10% in the regression on $DISPFE_{i,t}^t$, which indicates that the analysts' forecast dispersion is lower for firms listed on foreign exchanges. Lastly, the coefficient of $ROA_{i,t}$ is significantly negative at 1% for the regression of $DISPFETP_{i,t}^t$, which indicates that the dispersion of target price forecasts is lower for firms with greater profitability. Overall, these results indicate that firms' reporting incentives do affect analysts' information environment. This is consistent with hypothesis $H2$ and confirms the results from the univariate analysis reported in Section 4.5.

[Table 6 here]

5.3 Impact of mandatory adoption of IFRS on analysts' information environment after controlling for firm-level reporting incentives

Given the results in Tables 5 and 6, we now examine whether IFRS improves analysts' information environment after controlling for firm-level reporting incentives based on models (11), (12) and (13). We regress the analysts' information environment (measured by $FE_{i,t}^t$, $FE_{i,t}^{t+1}$, $DISPFE_{i,t}^t$, $DISPFE_{i,t}^{t+1}$, $DISPFETP_{i,t}^t$, $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$) on $IFRS_{i,t}$, firm-level reporting incentives ($AUD_{i,t}$, $BTMV_{i,t}$, $LEV_{i,t}$, $NUMEX_{i,t}$, $ROA_{i,t}$) as well as the other control variables.

Table 7 shows that $IFRS_{i,t}$ is negatively associated in the regressions of $FE_{i,t}^t$ and $DISPFE_{i,t}^t$, as well as in the regression of $DISPFETP_{i,t}^t$, at 5% and 1% respectively. Moreover, $IFRS_{i,t}$ is positively associated with $LOGFOLLOW_{i,t}^t$ and $LOGFOLLOW_{i,t}^{t+1}$ at 1%. However, the association between $IFRS_{i,t}$ and $FE_{i,t}^{t+1}$ as well as $IFRS_{i,t}$ and $DISPFE_{i,t}^{t+1}$ is positive but insignificant. These results are consistent with those reported in Table 5, implying that mandatory adoption of IFRS can improve analysts' information environment after controlling firms' incentives, particularly when the institutional settings of Latin American countries, such as the enforcement of

accounting standards and the investor protection mechanisms, are weak and did not change significantly in the 4 years following the IFRS adoption.

[Table 7 here]

5.4 The precision of the information environment

Table 7, along with the previous sections, shows that IFRS can improve analysts' information environment in Latin American countries after controlling for firm-level reporting incentives, and under the weak institutional setting, without significant changes to enforcement and investor protection. In this section we further investigate how mandatory adoption of IFRS affects analysts' public, private and consensus information based on the works of Barron *et al.* (1998) and Byard *et al.* (2011). Based on model (17), Table 8 presents the association between $IFRS_{i,t}$ and $PUBLIC_{i,t}$, $PRIVATE_{i,t}$ and $CONSENSUS_{i,t}$, respectively.

The results show that $IFRS_{i,t}$ is positively associated with $PUBLIC_{i,t}$ at 5% significance. This suggests that the precision of public information is higher following the IFRS adoption. This is consistent with the hypothesis $H3a$. However, the association between $IFRS_{i,t}$ and $PRIVATE_{i,t}$ is insignificantly negative. This suggests that the adoption of IFRS increases the precision of public information, but it does not affect analysts' information gathered from private sources. $IFRS_{i,t}$ is positively associated with $CONSENSUS_{i,t}$ at 1%. This suggests that the precision of consensus information is also increased, which is consistent with the findings of increased precision of public information.

In summary, our results show that IFRS improves the precision of public and consensus information. Together with the results in Tables 5 and 7, we conclude that the mandatory adoption of IFRS improves the analysts' information environment in Latin American countries, after controlling for firm-level reporting incentives. This

improvement is mainly reflected in the precision of public information and consensus information.

[Table 8 here]

5.5 Additional robustness tests

We have conducted a battery of robustness tests. First, we also estimated all regressions using firm-fixed effects to control for firm specific characteristics within a country and our inferences remained unchanged. Second, we gathered another sample of firms from the IBES summary file as pointed out on Section 4.3 with 285 firms presented on table 1, panel C and also find similar results. Third, as the findings of this study could be attributed to analysts improving their forecast accuracy over time and not due to the adoption of IFRS, we generate another set of results (not reported) by estimating all regressions with a trend variable included. This variable is set as a continuous increasing trend over the years. For instance, it is 1 if the year is 2006, 2 if the year is 2007, 3 if the year is 2008, etc. This variable identifies whether the metrics employed in this study are affected by a trend overtime. It suggests that such a trend is not a problem and the results remain consistent to those presented above, as this variable is insignificant. Fourth, we have also extensively tried to use a difference-in-difference design, however there is a major problem with this approach in our case. All firms are mandated to adopt IFRS in our sample and as such we do not have any non-adopter to compare with considering the countries in our sample. We have tried to get data for firms in other countries that share the institutional settings with Latin American countries that had not adopted IFRS prior to 2015 and have data available to conduct the analyses. To some extent we have tried to use data of firms from Colombia that have only adopted IFRS in 2014 and Bolivia that have not adopted IFRS. However, there are no firms with data available using the IBES detail file. Moreover, we have also tried to

use the IBES summary file, however there are only 2 Colombian firms with data available with many missing control variables as well as missing long-term mean provided by the analysts. Therefore, we could not adopt this research design.

6. Conclusion

This study investigates (i) whether mandatory adoption of IFRS improves the analysts' information environment in Latin American countries; (ii) whether firm-level reporting incentives affect the analysts' information environment; and (iii) whether the mandatory adoption of IFRS improves the precision of public and consensus information. We expand the measures of analysts' information environment currently used by the literature such as the number of analysts following firms, analysts' forecast errors, and dispersion of current-year earnings forecasts; we include these metrics regarding one-year-ahead earnings forecasts as well as the dispersion of current-year target price forecasts. We also extend the measurement period to four years prior and four years after the mandatory adoption of IFRS. This allows us to examine the long-term effect of IFRS adoption. The results show that the mandatory adoption of IFRS improves analysts' information environment in Latin American countries. This may be because of the difference between the domestic accounting standards and IFRS, and the increase in disclosure required by IFRS. This result holds after controlling for firm-level reporting incentives. Second, firm-level reporting incentives can improve analysts' information environment. This may be because firms intend to signal the quality of their equity to investors by adopting IFRS when investors perceive a high cost to verify financial information, and risk in investing in emerging markets. Third, the improvement in analysts' information environment, brought out by the mandatory adoption of IFRS, is reflected in the enhanced precision of public and consensus information. As the precision of public and consensus information is improved, this

strengthens the above explanation that the adoption of IFRS enhances the quality of information available to analysts, in comparison to the quality of information provided by the previous domestic standards, which were mainly designed for tax and government needs, and were of little use for the external users.

Our research extends the literature regarding the impact of IFRS on analysts' information environment. Christensen *et al.* (2013) and Preiato *et al.* (2015) indicate that a country's institutional settings, and its development over the years, are mixed with the impact of the IFRS adoption. As such, previous literature that has not considered these features would need to be revisited. By investigating Latin American countries where the institutional settings have not changed significantly, we mitigate the issue raised by previous literature and bring more accurate evidence of the sole effect of the IFRS adoption. Our study indicates that the adoption of IFRS can benefit analysts covering Latin American firms, mainly due to the big gap between IFRS and previous domestic accounting standards that affects the quality and usefulness of financial statements in the long-term. It is worth noting, however, that the benefits from the adoption of IFRS could take more time to appear depending on countries' institutional settings, firms' incentives, and the difference between IFRS and previous domestic accounting standards. Thus, we suggest that future studies consider a long-term approach in comparison with a short-term approach (2 years before and after the IFRS adoption, for instance) in their research design. Investigating a short-term approach may lead to inconclusive evidence about the impact of IFRS, and as such future research can cast more light on the impact of IFRS adoption on analysts' information environment in other countries by investigating the longer-term.

Our study is a reference point for the IASB and the regulators of Latin American countries. The results confirm the positive impact of the mandatory adoption of IFRS as

well as the governments' policies regarding the implementation of these standards. As analysts' information environment improves, this could be beneficial for investors who could now more accurately assess their risks in investing in these emerging economies. It could be beneficial for forming portfolios and achieving higher yields as they compare the performance of these firms with other international firms. Following the economic and political crises that these countries have faced in recent years, lower inflation rates and higher growth rates alongside the increase in the reliability of financial statements of public companies may attract more investment, which could lead to an improvement in market efficiency as well as market liquidity (Han *et al.*, 2016).

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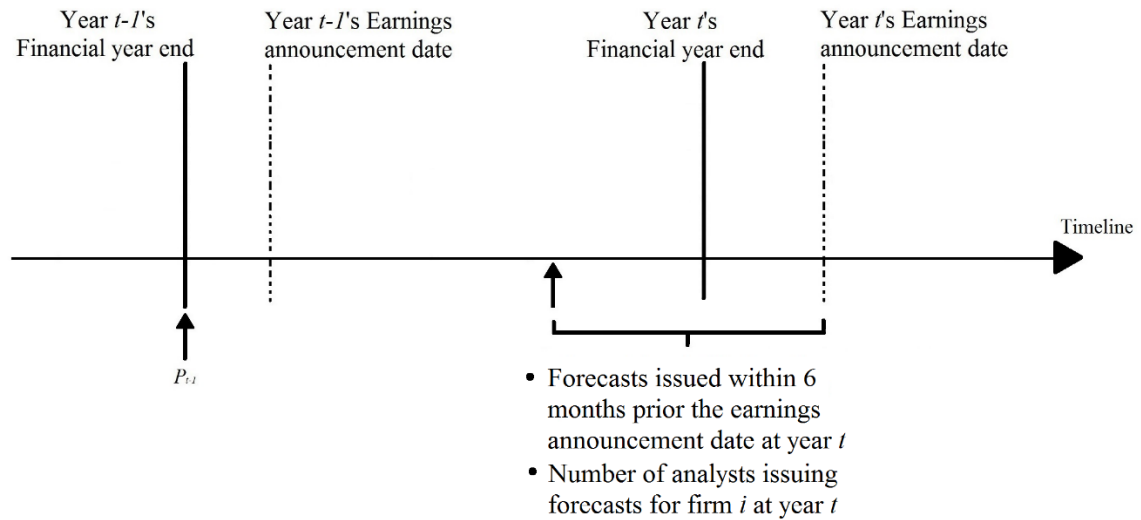
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Tables and Figures

Figure 1. Illustration of the calculations of forecast error and forecast dispersion



The observations of current-year and one-year-ahead earnings forecast errors, and current-year target price, are collected within the first six months prior to the earnings announcement date of firm i in year t . Then, we calculate the mean and median of forecast errors of current-year earnings and one-year-ahead earnings due to model (1), dispersion of current-year earnings, one-year-ahead earnings and current-year target price due to model (2), and number of analysts issued forecasts due to model (3) based on these observations with the first six months prior to the earnings announcement date of firm i in year t . Market and accounting variables are calculated according to the financial year end of firm i in year t .

Table 1. Sample structure 2003-2015

<i>Panel A. Number of firms from I/B/E/S</i>						
NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11	3	1	3	2		9
21	7	17	8	9	16	57
22	12	30	20	7	5	74
23	8	13	16	25	6	68
31–33	16	41	29	38	22	146
42						
44–45	1	18	9	17	1	46
48–49	3	11	8	4		26
51	1	2	2	7	1	13
54	1	3	1	2		7
72		4	6	10	2	22
81	3	34	6	19	4	66
Total	55	174	108	140	57	534
<i>Panel B. Number of firms for which all data is available at least for one of the years during the period of eight years around the date of mandatory adoption of IFRS regarding current-year earnings forecasts.</i>						
NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11		1	1			2
21		5	2			7
22		5	6			11
23		6	0			6
31–33		17	3	1		21
42						
44–45		8	2	1		11
48–49		7	1	1		9
51	1	1				2
54		1				1
72			1			1
81		25	1			26
Total	1	76	17	3	0	97
<i>Panel C. Number of firms for which all data is available during the period of eight years around the date of mandatory adoption of IFRS regarding current-year earnings forecasts. Data is collected from the Summary File of I/B/E/S.</i>						
NAICS	Argentina	Brazil	Chile	Mexico	Peru	Total
11		1	1			2
21	5	13	3	6	10	37
22	7	16	11	4	4	42
23		9	4	13	4	30
31–33	2	24	7	19	7	59
42	1	4	4	6		15
44–45		13	5	8	1	27
48–49		9	2	3		14
51	1	1		4		6
54		3	1	1		5
72		2	1	5		8
81	1	29	3	7		40
Total	17	124	42	76	26	285

Note: Panel A reports the number of Latin American firms downloaded from I/B/E/S for the sample period from 2003 to 2015. North American Industry Classification System (NAICS) 11: agriculture, forestry, fishing and hunting; NAICS 21: mining, quarrying, oil and gas extraction; NAICS 22: utilities; NAICS 23: construction; NAICS 31–33: manufacturing; NAICS 42: wholesale trade; NAICS 44–45: retail trade; NAICS 48–49: transportation & warehousing; NAICS 51: information; NAICS 54: Professional scientific & technical services; NAICS 72: accommodation & food services; NAICS 81: other services (excluding public administration, religious organizations, grantmaking & giving services, voluntary organizations, social advisory services, human rights organizations, civil and social organizations, business & professional, political & labour organizations, business associations, professional organizations, private households etc.). Please note that in Panel B there are only 97 firms for which all data (inclusive of the control variables) is available to conduct the analyses for current-year earnings forecast errors. Tables 2 to 8 illustrate accurately the number of firms for the other analyses employed.

Table 2. Descriptive statistics

	Pre				Post			
	Obs	Mean	Median	Std. Dev	Obs	Mean	Median	Std. Dev
<i>Test variables</i>								
$FE_{i,t}^t$	257	0.0415	0.0116	0.173	369	0.0312**	0.00842	0.163
$FE_{i,t}^{t+1}$	267	0.103	0.0225	0.348	354	0.105	0.0187	0.517
$LOGFOLLOW_{i,t}^t$	264	1.394	1.386	1.006	371	1.871***	2.079***	1.001
$LOGFOLLOW_{i,t}^{t+1}$	272	1.412	1.386	1.005	354	1.993***	2.197***	0.964
$DISPFE_{i,t}^t$	202	0.0216	0.0107	0.0290	325	0.0199	0.0103	0.0280
$DISPFE_{i,t}^{t+1}$	223	0.0283	0.0168	0.0374	329	0.0263**	0.0125**	0.0446
$DISPFETP_{i,t}^t$	238	0.0850	0.0306	0.152	348	0.0702**	0.0444**	0.0993
$PUBLIC_{i,t}$	168	-0.125	0.259	1.018	308	0.0682*	0.356*	0.819
$PRIVATE_{i,t}$	168	0.0784	-0.298	0.973	308	-0.0428	-0.379	0.853
$CONSENSUS_{i,t}$	168	-0.246	-0.153	1.063	308	0.134***	0.325***	0.762
<i>Incentives variables</i>								
$AUD_{i,t}$	264	0.898	1	0.304	371	0.906	1	0.293
$BTMV_{i,t}$	234	0.647	0.495	0.547	366	0.683	0.571**	0.602
$LEV_{i,t}$	259	1.431	0.970	2.301	369	1.641	1.230	1.830
$NUMEX_{i,t}$	264	0.345	0	0.707	371	0.240	0	0.605
$ROA_{i,t}$	259	0.0480	0.0497	0.0714	369	0.0404	0.0457	0.0872
<i>Control variables</i>								
$SIZE_{i,t}$	237	7.330	7.245	1.263	368	7.535**	7.527**	1.189
$EPS\Delta_{i,t}$	219	-0.00746	-0.00936	0.0590	360	0.00833***	0***	0.0576
$R_{i,t-1}$	144	0.0891	-0.00335	0.486	268	0.0295	-0.0708*	0.446
$LOGHORIZON_{i,t}^t$	260	4.501	4.727	0.793	365	4.501	4.700	0.705
$LOGHORIZON_{i,t}^{t+1}$	289	6.243	6.256	0.232	365	6.238	6.240	0.257
$LOGHORIZONTTP_{i,t}^t$	233	4.014	3.912	0.442	330	4.010	3.970	0.337
$LOGFOLLOW_{i,t}^t$	264	1.394	1.386	1.006	371	1.871***	2.079***	1.001
$LOGFOLLOW_{i,t}^{t+1}$	272	1.412	1.386	1.005	354	1.993***	2.197***	0.964
$LOGFOLLOWTP_{i,t}^t$	261	2.511	2.708	1.299	357	3.237***	3.526***	1.259

*, **, *** indicate the statistical significant difference between means (medians) in 'Pre' and in 'Post' at the 10%, 5%, 1% (respectively) two-tailed test. $FE_{i,t}^t$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for current-year forecasts. $FE_{i,t}^{t+1}$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for one-year ahead forecasts. $LOGFOLLOW_{i,t}^t$ denotes the number of analysts following firm i that issues current-year forecasts (the superscript t) in year t (the subscript t). $LOGFOLLOW_{i,t}^{t+1}$ denotes the number of analysts following firm i that issues one-year-ahead forecasts (the superscript $t+1$) in year t (the subscript t). $DISPFE_{i,t}^t$ is the standard deviation of forecasts of earnings per share divided by stock price at $t-1$. $DISPFE_{i,t}^{t+1}$ is the standard deviation of forecasts of one-year-ahead earnings per share divided by stock price at $t-1$. $DISPFETP_{i,t}^t$ The standard deviation of forecasts of target price per share divided by the absolute mean of current-year target price forecasts. $PUBLIC_{i,t}$ denotes the standardized values according to equation 14. $PRIVATE_{i,t}$ denotes the standardized values according to equation 15. $CONSENSUS_{i,t}$ is the ratio that equals to $PUBLIC_{i,t}$ divided by $PUBLIC_{i,t}$ plus $PRIVATE_{i,t}$. $AUD_{i,t}$ equals one if one of the Big 4 auditors audits firm i in year t , otherwise is 0. $BTMV_{i,t}$ is the book to market value ratio. $LEV_{i,t}$ is equal to total liabilities divided by total assets. $NUMEX_{i,t}$ is the number of foreign stock markets that a firm i lists on. $ROA_{i,t}$ is the ratio of net income over total assets. $SIZE_{i,t}$ is the log of the market value of equity. $EPS\Delta_{i,t}$ is the change in reported earnings of firm i from year $t-1$ to t scaled by the share price in year $t-1$ (Liang and Riedl, 2014). $R_{i,t-1}$ is the stock return of firm i in year $t-1$. $LOGHORIZON_{i,t}^t$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date, for firm i in year t . $LOGHORIZON_{i,t}^{t+1}$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date of year $t+1$.

$LOGHORIZONT_{i,t}^P$ is the log of 1 plus the average number of days between each analysts' forecast of target price, and target price of year t . $LOGFOLLOW_{i,t}^P$ denotes the number of analysts following firm i that issues current-year target price forecasts (the superscript t) in year t (the subscript t).

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Table 3. Changes in current-year earnings forecast errors ($FE_{i,t}^t$) for firms with strong and weak reporting incentives

Panel A. $FE_{i,t}^t$ of firms with strong and weak reporting incentives in 8 years around the IFRS adoption date

Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
Weak incentives	obs	56	517	288	437	246
	Mean	0.0780	0.0372	0.0590	0.0245	0.0342
Strong incentives	obs	570	109	338	189	380
	Mean	0.0312	0.0268	0.0152	0.0606	0.0361
Strong incentives– weak incentives	Dif.	-0.0468***	-0.0104*	-0.0438***	0.0361***	0.0019***
	Z-Wilcoxon	-5.426	-1.731	-5.833	5.378	7.223

Panel B. $FE_{i,t}^t$ of firms with strong and weak reporting incentives in 4 years after the IFRS adoption date

Weak incentives	obs	33	313	178	244	147
	Mean	0.0497	0.0314	0.0529	0.0242	0.0301
Strong incentives	obs	336	56	191	125	222
	Mean	0.0293	0.0292	0.0108	0.0446	0.0317
Strong incentives– weak incentives	Dif.	-0.0204***	-0.0022	-0.0421***	0.0204***	0.0016***
	Z-Wilcoxon	-5.052	-1.613	-5.232	3.766	6.62

Panel C. $FE_{i,t}^t$ of firms with strong reporting incentives in 8 years around the IFRS adoption date

Pre-adoption period	obs	234	53	147	64	158
	Mean	0.0338	0.0242	0.0209	0.0918	0.0423
Post-adoption period	obs	336	56	191	125	222
	Mean	0.0293	0.0292	0.0108	0.0446	0.0318
Post-Pre	Dif.	-0.0045***	0.0050	-0.0101***	-0.0472**	-0.0105***
	Z-Wilcoxon	-3.169	0.485	-3.157	-2.526	-3.535

*, ** and *** indicate the statistical significance between means at the 10%, 5% and 1% (respectively) two-tailed test. In this table, we evaluate whether the forecast error for firms with strong reporting incentives is lower after the IFRS adoption in comparison to firms with weak reporting incentives. $AUD_{i,t}$ equals one if one of the Big 4 auditors audits firm i in year t , otherwise is 0. $NUMEX_{i,t}$ is the number of foreign stock markets that a firm i lists on. $ROA_{i,t}$ is the ratio of net income over total assets. $LEV_{i,t}$ is equal to total liabilities divided by total assets. $BTMV_{i,t}$ is the book to market value ratio.

Table 4. Changes in the dispersion of current-year earnings forecasts ($DISPFE_{i,t}^t$) for firms with strong and weak reporting incentives*Panel A. $DISPFE_{i,t}^t$ of firms with strong and weak reporting incentives in 8 years around the IFRS adoption date*

Period/Incentives	Statistics	$AUD_{i,t}$	$NUMEX_{i,t}$	$ROA_{i,t}$	$LEV_{i,t}$	$BTMV_{i,t}$
Weak incentives	obs	40	437	234	371	199
	Mean	0.0407	0.0195	0.0268	0.0173	0.0299
Strong incentives	obs	487	90	293	156	328
	Mean	0.0188	0.0255	0.0154	0.0281	0.0148
Strong incentives– weak incentives	Dif.	-0.0219***	0.0060**	-0.0114***	0.0108***	-0.0151***
	Z-Wilcoxon	-4.035	2.038	-4.634	3.615	-7.046

Panel B. $DISPFE_{i,t}^t$ of firms with strong and weak reporting incentives in 4 years after the IFRS adoption date

Weak incentives	Obs	25	274	154	216	123
	Mean	0.0403	0.0188	0.0271	0.0269	0.0299
Strong incentives	Obs	310	51	171	109	202
	Mean	0.0181	0.0252	0.0133	0.0162	0.0137
Strong incentives– weak incentives	Dif.	-0.0222***	0.0064	-0.0138***	-0.0107**	-0.0162***
	Z-Wilcoxon	-3.724	1.59	-4.514	-2.314	-6.78

Panel C. $DISPFE_{i,t}^t$ of firms with strong reporting incentives in 8 years around the IFRS adoption date

Pre	Obs	187	39	122	47	126
	Mean	0.0200	0.0259	0.0184	0.0309	0.0165
Post	Obs	300	51	171	109	202
	Mean	0.0181	0.0252	0.0133	0.0269	0.0137
Post-Pre	Dif.	-0.0019	-0.0007	-0.0051**	-0.0040	-0.0028**
	Z-Wilcoxon	1.44	0.313	-2.283	1.574	-2.44

*, ** and *** indicate the statistical significance between means at the 10%, 5% and 1% respectively, two-tailed test. In this table, we evaluate whether the dispersion of earnings forecasts for firms with strong reporting incentives is lower after the IFRS adoption in comparison to firms with weak reporting incentives. $AUD_{i,t}$ equals one if one of a Big 4 auditor audits firm i in year t , otherwise is 0. $NUMEX_{i,t}$ is the number of foreign stock markets that a firm i lists on. $ROA_{i,t}$ is the ratio of net income over total assets. $LEV_{i,t}$ is equal to total liabilities divided by total assets. $BTMV_{i,t}$ is the book to market value ratio.

Table 5: Overall impact of Mandatory adoption of IFRS

Independent Variables	Pred. Sign	Dependent Variables						
		$FE_{i,t}^t$	$FE_{i,t}^{t+1}$	$DISPFE_{i,t}^t$	$DISPFE_{i,t}^{t+1}$	$DISPFETP_{i,t}^t$	$LOGFOLLOW_{i,t}^t$	$LOGFOLLOW_{i,t}^{t+1}$
$IFRS_{i,t}$	-/+	-0.0472** (-1.993)	0.0736 (0.872)	-0.00782** (-2.106)	0.00893 (1.347)	-0.0328* (-1.759)	0.406*** (4.954)	0.406*** (5.661)
$SIZE_{i,t}$	-/+	0.0311* (1.698)	-0.133 (-1.290)	-0.00476* (-1.836)	-0.0114* (-1.710)	0.00522 (0.242)	0.283*** (3.203)	0.324*** (4.343)
$R_{i,t-1}$	+	0.0317 (0.577)	0.165 (1.547)	0.00623 (1.042)	0.0214** (2.049)	0.0448*** (3.025)		
$EPS\Delta_{i,t}$	+/-	0.602 (1.250)	0.320 (0.852)	0.00781 (0.264)	-0.0196 (-0.403)	0.0475 (0.309)		
$LOGFOLLOW_{i,t}^t$	-	-0.0109 (-0.949)		0.00566*** (2.776)				
$LOGHORIZON_{i,t}^t$	+	0.00287 (0.487)		-0.00268 (-1.137)				
$LOGFOLLOW_{i,t}^{t+1}$	-		0.0126 (1.603)		0.000791 (0.995)			
$LOGHORIZON_{i,t}^{t+1}$	+		-0.0691 (-1.115)		-0.00355 (-0.231)			
$LOGFOLLOWTP_{i,t}^t$	-					0.000410 (1.185)		
$LOGHORIZONTTP_{i,t}^t$	+					0.0383* (1.948)		
<i>Fixed effects</i>								
INDUSTRY		YES	YES	YES	YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES	YES	YES	YES
Constant		-0.206 (-1.315)	1.347 (1.647)	0.0698** (2.420)	0.119 (1.318)	-0.128 (-0.942)	-1.656** (-2.346)	-0.873 (-1.597)
Adjusted R-squared		0.115	0.084	0.044	0.046	0.038	0.192	0.216
Observations		400	402	385	394	523	605	599
Number of firms		98	96	94	96	110	115	112

Robust t-statistics in parentheses, *, ** and *** indicate the statistical significance at the 10%, 5% and 1% respectively. In this table, we use several regressions to evaluate whether $IFRS_{i,t}$, which is equal to 1 if the forecasts are derived after mandatory IFRS adoption and is equal to 0 otherwise, is significant in improving the analysts' information environment. $FE_{i,t}^t$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for current-year forecasts. $FE_{i,t}^{t+1}$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for one-year ahead forecasts. $DISPFE_{i,t}^t$ is the standard deviation of forecasts of earnings per share divided by stock price at $t-1$. $DISPFE_{i,t}^{t+1}$ is the standard deviation of forecasts of one-year-ahead earnings per share divided by stock price at $t-1$. $DISPFETP_{i,t}^t$ is the standard deviation of forecasts of target price per share divided by the absolute mean of current-year target price forecasts. $LOGFOLLOW_{i,t}^t$ denotes the number of analysts following firm i that issues current-year forecast (the superscript t) in year t (the subscript t). $LOGFOLLOW_{i,t}^{t+1}$ denotes the number of analysts following firm i that issues one-year-ahead forecasts (the superscript $t+1$) in year t (the subscript t). $SIZE_{i,t}$ is the log of the market value of equity. $EPS\Delta_{i,t}$ is the change in reported earnings of firm i from year $t-1$ to t scaled by the share price in year $t-1$ (Liang and Riedl, 2014). $R_{i,t-1}$ is the stock return of firm i in year $t-1$. $LOGHORIZON_{i,t}^t$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date, for firm i in year t . $LOGHORIZON_{i,t}^{t+1}$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date of year $t+1$. $LOGHORIZONTTP_{i,t}^t$ is the log of 1 plus the average number of days between each analysts' forecast of target price, and target price of year t . $LOGFOLLOWTP_{i,t}^t$ denotes the number of analysts following firm i that issues current-year target price forecast (the superscript t) in year t (the subscript t).

Table 6: The impact of firm-level reporting incentives on analysts' information environment

Independent Variables	Pred. sign	Dependent Variables						
		$FE_{i,t}^t$	$FE_{i,t}^{t+1}$	$DISPFE_{i,t}^t$	$DISPFE_{i,t}^{t+1}$	$DISPFETP_{i,t}^t$	$LOGFOLLOW_{i,t}^t$	$LOGFOLLOW_{i,t}^{t+1}$
$AUD_{i,t}$	-/+	-0.0935 (-1.261)	0.0140 (0.0630)	0.0136 (1.342)	-0.0253 (-1.282)	0.00140 (0.0309)	-0.270 (-1.184)	0.595*** (5.567)
$BTMV_{i,t}$	+/-	-0.00215 (-0.137)	-0.0530 (-0.520)	0.0106* (1.873)	0.0162 (1.239)	-0.00625 (-0.304)	0.318*** (2.640)	0.220** (1.983)
$LEV_{i,t}$	-/+	-5.43e-05 (-0.00784)	0.0787 (1.122)	-0.000660 (-0.820)	2.92e-05 (0.00402)	-0.0147*** (-3.608)	0.0138 (0.522)	0.125 (1.498)
$NUMEX_{i,t}$	-/+	-0.0193 (-1.326)	-0.0394 (-0.773)	-0.00385* (-1.905)	0.00429 (0.895)	0.0210 (1.607)	0.0594 (0.645)	0.000180 (0.00793)
$ROA_{i,t}$	-/+	-0.289 (-1.147)	-0.843 (-0.893)	-0.0196 (-0.835)	-0.127 (-1.575)	-0.262*** (-3.671)	-0.744 (-1.245)	-0.524 (-0.975)
$SIZE_{i,t}$	-/+	0.0276 (1.307)	-0.103 (-1.064)	-0.00140 (-0.425)	-0.000453 (-0.0477)	0.00144 (0.0892)	0.555*** (6.063)	0.550*** (6.500)
$R_{i,t-1}$	+	0.0237 (0.421)	0.105 (1.338)	0.00721 (1.104)	0.0205** (2.074)	0.0476*** (3.188)		
$EPS\Delta_{i,t}$	-/+	0.525 (1.414)	0.192 (0.453)	0.00788 (0.287)	-0.0659 (-0.999)	-0.00430 (-0.0288)		
$LOGFOLLOW_{i,t}^t$	-	-0.0369 (-1.518)		0.000793 (0.333)				
$LOGHORIZON_{i,t}^t$	+	0.00431 (0.786)		-0.00270 (-1.240)				
$LOGFOLLOW_{i,t}^{t+1}$	-		0.0163 (1.098)		0.000502 (0.384)			
$LOGHORIZON_{i,t}^{t+1}$	+		-0.0724 (-0.932)		0.00381 (0.221)			
$LOGFOLLOWTP_{i,t}^t$	-					7.19e-05 (0.273)		
$LOGHORIZONTP_{i,t}^t$	+					0.0260 (1.485)		
<i>Fixed Effects</i>								
INDUSTRY		YES	YES	YES	YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES	YES	YES	YES
Constant		-0.132 (-0.979)	1.348 (1.439)	0.0349 (1.087)	0.0168 (0.119)	0.0896 (0.649)	-2.617*** (-3.560)	-2.429*** (-3.572)
Adjusted R-squared		0.102	0.130	0.038	0.110	0.094	0.146	0.151
Observations		399	401	384	393	520	600	594
Number of Firms		97	95	93	95	109	114	111

Robust t-statistics in parentheses, *, ** and *** indicate the statistical significance at 10%, 5% and 1% respectively. In this table, we use several metrics to evaluate whether firms incentives denoted by $AUD_{i,t}$, $BTMV_{i,t}$, $LEV_{i,t}$, $NUMEX_{i,t}$ and $ROA_{i,t}$ are significant in improving the analysts' information environment. $AUD_{i,t}$ equals one if one of the Big 4 auditors audits firm i in year t , otherwise is 0. $BTMV_{i,t}$ is the book to market value ratio. $LEV_{i,t}$ is equal to total liabilities divided by total assets. $NUMEX_{i,t}$ is the number of foreign stock markets that a firm i lists on. $ROA_{i,t}$ is the ratio of net income over total assets. $FE_{i,t}^t$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for current-year forecasts. $FE_{i,t}^{t+1}$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for one-year ahead forecasts. $DISPFE_{i,t}^t$ is the standard deviation of forecasts of earnings per share divided by stock price at $t-1$. $DISPFE_{i,t}^{t+1}$ is the standard deviation of forecasts of one-year-ahead earnings per share divided by stock price at $t-1$. $DISPFETP_{i,t}^t$ is the standard deviation of forecasts of target price per share divided by the absolute mean of current-year target price forecasts. $LOGFOLLOW_{i,t}^t$ denotes the number of analysts following firm i that issues current-year forecasts (the superscript t) in year t (the subscript t). $LOGFOLLOW_{i,t}^{t+1}$ denotes the number of analysts following firm i that issues one-year-ahead forecasts (the superscript $t+1$) in year t (the subscript t). $SIZE_{i,t}$ is the log of the market value of equity. $EPS\Delta_{i,t}$ is the change in reported earnings of firm i from year $t-1$ to t scaled by the share price in year $t-1$ (Liang and Riedl, 2014). $R_{i,t-1}$ is the stock return of firm i in year $t-1$. $LOGHORIZON_{i,t}^t$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date, for firm i in year t .

$LOGHORIZON_{i,t}^{t+1}$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date of year $t+1$. $LOGHORIZONT_{i,t}^t$ is the log of 1 plus the average number of days between each analysts' forecast of target price, and target price of year t . $LOGFOLLOWTP_{i,t}^t$ denotes the number of analysts following firm i that issues current-year target price forecast (the superscript t) in year t (the subscript t).

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Table 7. Impact of mandatory adoption of IFRS on analysts' information environment after controlling for firm-level reporting incentives

Independent variables	Pred. Sign	Dependent Variables						
		$FE_{i,t}^t$	$FE_{i,t}^{t+1}$	$DISPFE_{i,t}^t$	$DISPFE_{i,t}^{t+1}$	$DISPFETP_{i,t}^t$	$LOGFOLLOW_{i,t}^t$	$LOGFOLLOW_{i,t}^{t+1}$
$IFRS_{i,t}$	-/+	-0.0487** (-1.962)	0.0687 (0.922)	-0.00877** (-2.475)	0.00784 (1.227)	-0.0528*** (-3.139)	0.380*** (4.676)	0.406*** (5.664)
$AUD_{i,t}$	-/+	-0.0878 (-1.198)	0.0314 (0.132)	0.0159 (1.462)	0.0193 (1.273)	-0.0357 (-0.754)	0.0285 (0.120)	0.0689 (0.434)
$BTMV_{i,t}$	+/-	0.00778 (0.499)	-0.0634 (-0.679)	0.0129** (2.195)	0.0150 (1.331)	0.00984 (0.476)	0.173* (1.680)	0.0614 (0.648)
$LEV_{i,t}$	-/+	-0.000614 (-0.0722)	-0.0378 (-0.889)	-0.000821 (-0.831)	0.00449 (1.124)	-0.0156*** (-4.021)	0.0121 (0.711)	-0.00176 (-0.118)
$NUMEX_{i,t}$	-/+	-0.0204 (-1.249)	0.111 (1.091)	-0.00462** (-2.213)	0.00374 (0.422)	-0.0123 (-0.595)	-0.205 (-0.393)	0.356*** (4.342)
$ROA_{i,t}$	-/+	-0.322 (-1.189)	-0.797 (-0.993)	0.00694 (1.088)	0.0214** (2.419)	-0.325*** (-5.168)	0.253*** (2.786)	0.0229 (0.0499)
$SIZE_{i,t}$	-/+	0.0442 (1.555)	-0.122 (-1.224)	0.00212 (0.626)	-0.00258 (-0.292)	0.0220 (1.205)	0.372*** (4.164)	0.356*** (4.415)
$R_{i,t-1}$	+	0.0238 (0.432)	0.113 (1.522)	-0.0304 (-1.129)	-0.122* (-1.803)	0.0463*** (3.059)		
$EPS\Delta_{i,t}$	+/-	0.516 (1.417)	0.191 (0.519)	0.00679 (0.233)	-0.0655 (-1.166)	0.00899 (0.0621)		
$LOGFOLLOW_{i,t}^t$	-	-0.00378 (-1.255)		0.000525 (1.032)				
$LOGHORIZON_{i,t}^t$	+	0.00429 (0.814)		-0.00287 (-1.365)				
$LOGFOLLOW_{i,t}^{t+1}$	-		0.0105 (1.268)		-0.000169 (-0.161)			
$LOGHORIZON_{i,t}^{t+1}$	+		-0.0717 (-0.997)		0.00395 (0.226)			
$LOGFOLLOWTP_{i,t}^t$	-					0.000382 (1.485)		
$LOGHORIZONTP_{i,t}^t$	+					0.0301* (1.815)		
Fixed Effects								
INDUSTRY		YES	YES	YES	YES	YES	YES	YES
COUNTRY		YES	YES	YES	YES	YES	YES	YES
Constant		-0.265 (-1.373)	1.449 (1.513)	-0.00320 (-0.108)	0.00137 (0.0104)	-0.0416 (-0.263)	-1.408** (-2.052)	-1.149* (-1.842)
Adjusted R-squared		0.123	0.137	0.056	0.1151	0.125	0.210	0.223
Observations		399	401	384	393	520	600	594
Number of Firms		97	95	93	95	109	114	111

Robust t-statistics in parentheses, *, ** and *** indicate the statistical significance at 10%, 5% and 1% respectively. In this table, we use several metrics to evaluate whether $IFRS_{i,t}$, which is equal to 1 if the forecasts are derived after mandatory IFRS adoption and is equal to 0 otherwise, is significant in improving the analysts' information environment after controlling for firms' incentives. $FE_{i,t}^t$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for current-year forecasts. $FE_{i,t}^{t+1}$ is the absolute value of the mean of the forecast of earnings per share minus actual earnings per share divided by stock price at $t-1$ for one-year ahead forecasts. $DISPFE_{i,t}^t$ is the standard deviation of forecasts of earnings per share divided by stock price at $t-1$. $DISPFE_{i,t}^{t+1}$ is the standard deviation of forecasts of one-year-ahead earnings per share divided by stock price at $t-1$. $DISPFETP_{i,t}^t$ The standard deviation of forecasts of target price per share divided by the absolute mean of current-year target price forecasts. $LOGFOLLOW_{i,t}^t$ denotes the number of analysts following firm i that issues current-year forecasts (the superscript t) in year t (the subscript t). $LOGFOLLOW_{i,t}^{t+1}$ denotes the number of analysts following firm i that issues one-year-ahead forecasts (the superscript $t+1$) in year t (the subscript t). $AUD_{i,t}$ equals one if one of the Big 4 auditors audits firm i in year t , otherwise is 0. $BTMV_{i,t}$ is the book to market value ratio. $LEV_{i,t}$ is equal to total liabilities divided by total assets. $NUMEX_{i,t}$ is the

number of foreign stock markets that a firm i lists on. $ROA_{i,t}$ is the ratio of net income over total assets. $SIZE_{i,t}$ is the log of the market value of equity. $EPS\Delta_{i,t}$ is the change in reported earnings of firm i from year $t-1$ to t scaled by the share price in year $t-1$ (Liang and Riedl, 2014). $R_{i,t-1}$ is the stock return of firm i in year $t-1$. $LOGHORIZON_{i,t}^t$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date, for firm i in year t . $LOGHORIZON_{i,t}^{t+1}$ is the log of 1 plus the average number of days between the earnings forecast and the earnings announcement date of year $t+1$. $LOGHORIZON_{i,t}^P$ is the log of 1 plus the average number of days between each analysts' forecast of target price, and target price of year t . $LOGFOLLOWTP_{i,t}^t$ denotes the number of analysts following firm i that issues current-year target price forecasts (the superscript t) in year t (the subscript t).

Table 8: The impact of mandatory adoption of IFRS on analysts' public, private and consensus information

$$PRECISION_{i,t} = \alpha + \beta_1 IFRS_{i,t} + \beta_2 SIZE_{i,t} + \sum_{d=1}^{12} \beta_{d+2} NAICS_i + \sum_{c=1}^5 \beta_{c+14} COUNTRY_i + \varepsilon_{i,t}$$

Independent variables	Pred. Sign	Dependent variables		
		<i>PUBLIC</i> _{<i>i,t</i>}	<i>PRIVATE</i> _{<i>i,t</i>}	<i>CONSENSUS</i> _{<i>i,t</i>}
<i>IFRS</i> _{<i>i,t</i>}	+	0.191** (1.998)	-0.117 (-1.362)	0.383*** (3.600)
<i>SIZE</i> _{<i>i,t</i>}	+/?	0.0214 (1.171)	-0.0360* (-1.941)	0.0467* (1.860)
Constant		-0.124** (-1.991)	0.0763 (1.360)	-0.222* (-1.716)
<i>Fixed Effects</i>				
INDUSTRY		YES	YES	YES
COUNTRY		YES	YES	YES
Adjusted R-squared		0.007	0.002	0.013
Observations		476	476	476
Number of firms		93	93	93

Robust t-statistics in parentheses, *, ** and *** indicate the statistical significance at 10%, 5% and 1% respectively. *PRECISION*_{*i,t*} is a common variable that denotes *PUBLIC*_{*i,t*}, *PRIVATE*_{*i,t*}, and *CONSENSUS*_{*i,t*}, which represent the precision of public, private and all available (consensus) information (Barron et al., 1998). *IFRS*_{*i,t*} is a dummy that equals to 1 for the IFRS period, otherwise zero. *SIZE*_{*i,t*} is the natural logarithm of market value of equity at the end of year *t*.

Appendix 1: Questionnaire

Please answer the following questions	Reference
ENFORCEMENT	Adapted from
1) Did the security market regulator or other body monitor financial reporting of public companies in 2009 ²¹ ?	Brown et al. (2014)
2) Has this situation changed since the mandatory IFRS adoption in 2010? If yes, please specify, and provide a particular month and year when the change happened. For example, the regulator was not responsible for this role before IFRS, however after the mandatory adoption of IFRS the regulator became responsible for it, or the regulator appointed a consultant to do this work.	
3) If there is a regulator monitoring the compliance behaviour of a firm after mandatory adoption of IFRS, how many firms did not comply with IFRS in the post mandatory adoption period (for example in 2011 and 2012)?	Hope (2003)-Rule of Law
4) What are the consequences for firms' noncompliance behaviours with the financial reporting and auditing requirements (e.g., fines, loss of limited liability status, loss of licenses, prison sentences for managers, claims for reparation by shareholders or others)?	World Bank (2008)
5) Which legislation outlines/presents the consequences (e.g., in the Acts or Codes, in a civil code, criminal code, capital markets legislation, stock exchange listing rules, etc.)?	
6) Have there been any changes at the above legislation(s) concerning the consequences of noncompliance since IFRS adoption? If yes, please specify.	Hope (2003)-Rule of Law
7) Has the regulator taken judicial action against a firm for a non-compliant financial statement? If yes, how many times during each individual year between 2009 and 2012? If not, please specify the reason.	
8) Has there been any increase in the number of staff employed by the regulator or monitoring body in order to enhance the enforcement of IFRS? If yes, could you specify a particular month	Brown et al. (2014)

²¹ The date of each question is adjusted for each country according to the official IFRS adoption date.

and year when the hires took place?	
<u>INVESTOR PROTECTION</u>	
9) What kind of voting mechanism does your country adopt? How does it work (for example, the shareholder's number of votes is equal to his number of shares, or there is a distinction between shares, or shareholders that have older shares have higher number of votes)?	La Porta et al. (1998) and Hope (2003) - Shareholder Protection
10) Is a shareholder able to vote through the mail?	
11) In order to be eligible to vote, does a shareholder need to deposit his shares in the company prior to a shareholder meeting, ensuring that the shares temporarily cannot be sold?	
12) Is there any legal regulation allowing the minority shareholders to challenge the directors' decision in the court? If yes, please specify.	
13) What is the minimum percentage of share capital needed in order to call for an extraordinary shareholder meeting?	
14) Is there any regulation regarding the minimum mandatory dividend percentage to be distributed to shareholders? If yes, please specify.	
15) Have there been any changes on the outlined voting and protection mechanisms after IFRS adoption? If yes, please specify which changes were made and the particular month and year they took place.	
16) Has the level of shareholder protection been improved since mandatory IFRS adoption? If yes, please specify how it has improved and provide the particular month and year that the improvement was made.	Hope (2003) - Insider Trading Laws
17) How many insider trading events were caught by the regulator in each individual year between 2009 and 2012?	
18) Did the regulator take further actions to court? If yes, please indicate. If no, please explain why.	
19) Have these insiders been convicted? If yes, how many were convicted in each individual year between 2009 and 2012?	

Appendix 2: Results of the questionnaire

QUESTIONS	COUNTRIES				
<u>ENFORCEMENT</u>	ARGENTINA	BRAZIL	CHILE	MEXICO	PERU
1)	Yes	Yes	Yes	Yes	Yes
2)	No	No	No	No	No
3)	None	Please refer to footnote 1	Many firms, but an exact statistic was not provided	NA	3 firms and 1 auditor's firm for providing inaccurate evidence of a firm's financial statement
4)	Fines and charges, however shareholders need to prosecute managers in order to claim for refunds and/or for the manager to go to prison	Fines, charges, manager can be temporary suspended	Fines and charges	Fines and charges	Fines and charges
5)	Law N. 26.832. (Legislación y normas de Mercado de Capitales)	Law N. 6.385/76, art. 11	Law N. 3538. (Ley Orgánica de la Superintendencia de Valores y Seguros)	Law of Stock Markets/05 (Ley del Mercado de Valores/2005)	Norm. CONASEV N° 0055-2001
6)	No	No	No	No	No
7)	NA	Please refer to footnote 2	None, only before the IFRS adoption and the number of firms has not been informed	NA	Only 1 in 2010, prior to the IFRS adoption
8)	No	In January 2012, there was an increment of 3 staff members, but they were relocated to other roles in due course	No	NA	1 in July 2014
<u>INVESTOR PROTECTION</u>	ARGENTINA	BRAZIL	CHILE	MEXICO	PERU
9)	One-Share-One-Vote	One-Share-One-Vote	One-Share-One-Vote	One-Share-One-Vote	One-Share-One-Vote
10)	No	No	Yes	No	Yes

11)	Yes	No	No	No	No
12)	Yes, Law of Societies (Ley de Sociedades) N. 19.550/84 establishes 5%	Yes, Law N. 6.404/76, art 159 defines 5% of minimum share capital	Art. 133 of Law of Public Societies (Ley sobre Sociedades Anonimas) establishes 5%	Yes, Law of Stock Markets (Ley de Mercado de Valores), art. 36 establishes that 5% of shares are required to start a prosecution against the director	Yes, Law of Societies (Ley General de Sociedades) N. 26887/97, art 219. However, it does not define a minimum percentage of share capital
13)	60% in a first call, and 30% in a second call	10%	10%	Unless defined in the statute, it is required 75% of the shareholders	20% according to art. 117 of Law of Societies (Ley General de Sociedades - Ley N. 26887/97)
14)	No	Yes. Law N. 6404/76 establishes 25%	Yes. Art 79 of Law of Public Societies defines 30%	Yes, 5%. According to Art. 113, 2 nd paragraph of General Law of Societies (Ley General de Sociedades Mercantiles) and art. 117, 6 th paragraph of Law of Stock Markets (Ley de Mercado de Valores)	Yes, 50% if 20% of the shareholders demand for it
15)	No	No	No	No	No
16)	No	No	No	No	No
17)	NA	Please refer to footnote 3	32	NA	NA
18)	NA	No. Because it is not a responsibility of the regulator. It is a duty of the Public Ministry of Brazil.	No. Because it is not a responsibility of the regulator.	NA	NA
19)	NA	Please refer to footnote 4	NA	NA	NA

NA: Not available;

Footnote 1: 2010: 2, 2011: 3, 2012: 2, 2013: 4, 2014: 18, 2015: 12;

Footnote 2: 2010: 2, 2011: 3, 2012: 2, 2013: 4, 2014: 18, 2015: 12;

Footnote 3: 2009: 4, 2010: 9, 2011: 3, 2012: 8, 2013: 15;

Footnote 4: The regulator caught the first case of insider trading in 2009, and the first conviction was only in November 2016.